JULY 12, 1954
IN TWO SECTIONS—SECTION ONE

STEEL

THE WEEKLY MAGAZINE OF METALWORKING

GUIDE FOR
steel
buyers
Looking for the closest mill for steel? Looking for some special form or size? Here are your answers. This guide shows U. S. mills which make finished forms of carbon, silicon, alloy and high-strength low-alloy steels. In many cases sizes are shown. Tool steels and stainless steels were covered in earlier guides. This is a refinement and expansion of the original "Guide for Steel Buyers" published in 1951.
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SECTION TWO
COMPILED BY THE EDITORS OF STEEL PENTON BUILDING • CLEVELAND 13
JULY 12, 1954

COMPLETE IN THIS ISSUE...

- Directory of mill sources for steel products

SEE SECTION TWO

CONTENTS — PAGE 5

How EC&M Frequency Relay Control improves A-C Bucket Cranes

Bucket crane of the Level-Luffing type operates speedily under EC&M Contra Torque Hoist Control.

CONTRA TORQUE

Bucket cranes in this fertilizer plant operate at high output with EC&M Contra Torque Hoist Control.

FAST GETAWAY—Quickly responsive to the frequency of the induced-rotor voltage, EC&M Frequency Relays match torque requirements to the load . . . get the motor up to speed quickly for lowering the bucket —to move the trolley in or out . . . cut down the time between trips.

WIDE SPEED SELECTION—These Relays permit starting-down on any master switch point—no waiting until last point is reached. And a better speed choice gives greater flexibility in clean-up operations, and speeds up output.

SMOOTH STOPPING—When checking motor lowering speed, weak torques are provided for light loads or the empty bucket; stronger torques for heavier loads. Trolley motor is stopped and reversed smoothly under Frequency Relay automatic operation.

SPEED-LIMITING *Safety* on all Speeds. These relays (one set for hoisting and lowering) automatically shift motor connections to safeguard lowering operation with greater skill than human hands could do it.

It Pays To Specify EC&M *Control*

THE ELECTRIC CONTROLLER & MFG. CO.

2698 EAST 79TH STREET • CLEVELAND 4, OHIO

When Should Alloy Steels Be Ordered to Hardenability?

This is the fifth of a series of advertisements dealing with basic facts about alloy steels. Though much of the information is elementary, we believe it will be of interest to many in this field, including men of broad experience who may find it useful to review fundamentals from time to time.

What is hardenability and how does it differ in carbon and alloy steels?

Hardenability can be defined as the capacity of steel to develop a desired degree of hardness, usually measured in depth. It is produced by special heating and cooling. Carbon steel, except in small sections, will normally harden to a depth slightly below its surface, while alloy steel can, under certain conditions, harden uniformly through its entire cross-section.

Surface hardness obtainable after quenching is largely a function of the carbon content of the steel. Depth hardness, on the other hand, is the result of alloying elements and grain size, in addition to the carbon present in the steel.

In general, where hardenability is the prime consideration, it is not too important which alloy steel is used, just as long as there is sufficient carbon present to give the prescribed hardness, and enough alloying elements to quench out the section. We might mention here that it is not considered good practice to alloy a small section excessively, since too free a use of alloying elements adds little to the properties and can, in some instances, induce susceptibility to quenching cracks.

There are, of course, numerous cases where factors other than hardenability must be considered; such factors as low-temperature impact, heavy shock, creep-resistance, and the ability to resist temper brittleness. Through-hardening, therefore, is not always desirable. For example, shallow hardening is often necessary in shock applications, because a moderately soft core is essential.

Our metallurgists will gladly explain where it is advantageous to order alloy steels to hardenability, and where it is preferable to order by analysis. They will also give you any help you may require in connection with heat-treating and machining problems.

And when in need of steels, remember that Bethlehem manufactures the entire range of AISI standard alloy grades, as well as special-analysis steels and all carbon grades. We can meet your needs promptly.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM ALLOY STEELS

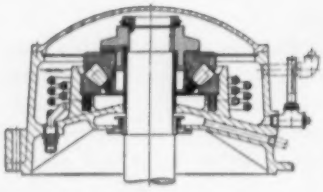
BETHLEHEM STEEL

traditional service **SKF**

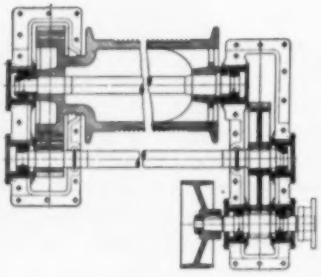
for the new **USS** TRADE MARK

Fairless Works

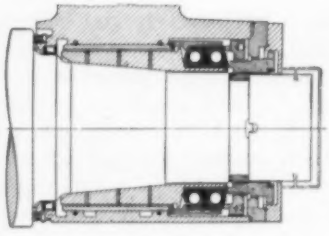
Steel's move to Delaware Valley is a *pioneering* move—
good for Steel, good for steel users.
Since 1907, SKF has pioneered along with America's
entire steel industry in applying the science of anti-friction
to more efficient mill operations. Here, for example, are
three outstanding SKF contributions to the Fairless Works—



The SKF Spherical Roller Thrust Bearings—installed on deep well pumps, un-coilers, and other equipment where there is a problem of heavy, high speed thrust loads.



The SKF Spherical Roller Bearings—provide longer bearing life for ingot cars, mill run-out tables, and cranes.



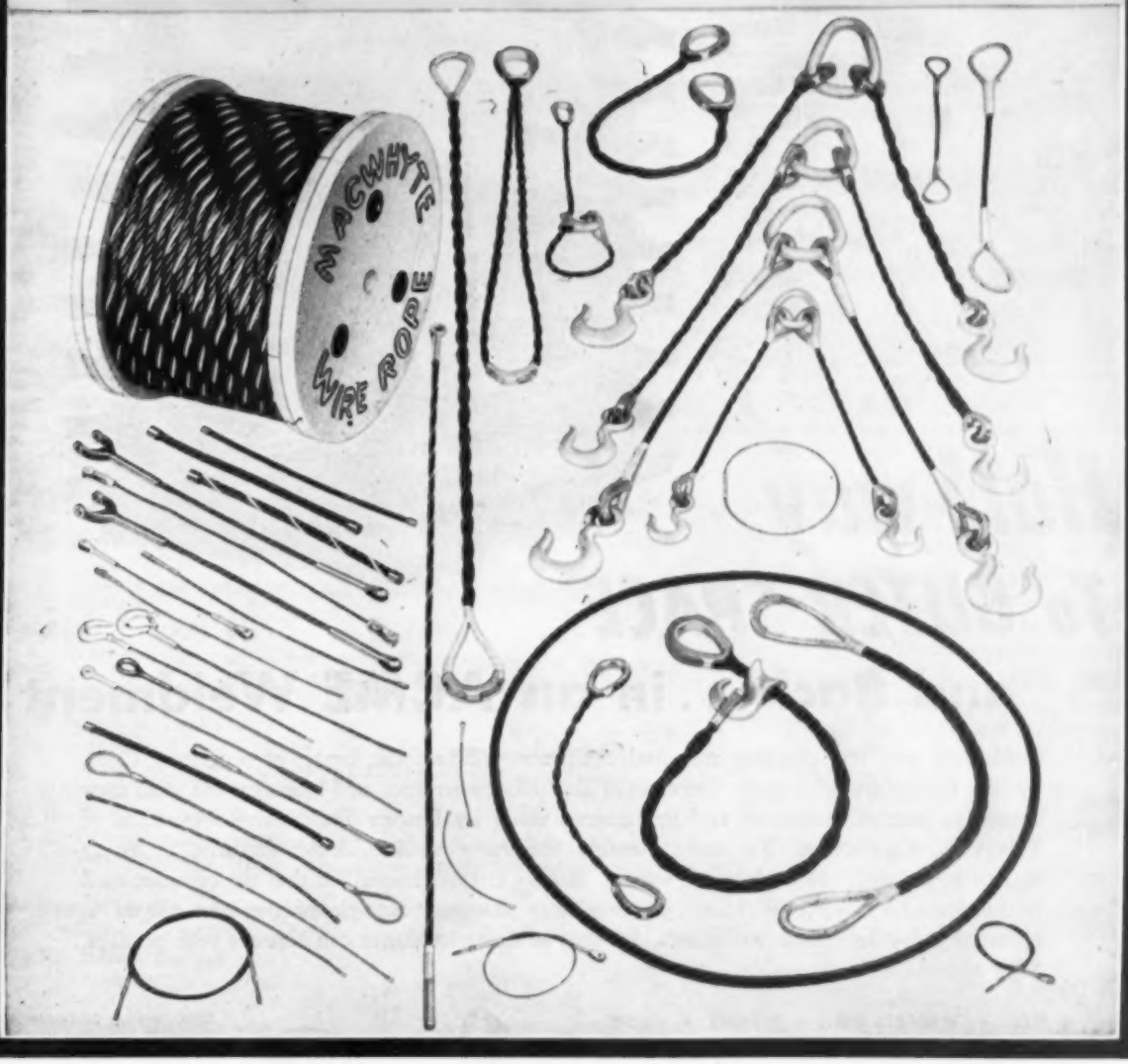
The SKF Double-Directional, Thrust Ball Bearings—with high thrust capacity for the grueling service of skelp mill operation.

Not only Steel but *every* industry has learned to look to SKF Engineers for the best ways to put the right bearing in the right place. 7548

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
—manufacturers of **SKF** *and* HESS-BRIGHT® *bearings.*

SKF®
BALL AND ROLLER BEARINGS

Save time and money with Macwhyte wire rope products



Above are shown only a few of the wire rope products made by Macwhyte. Wire rope is available in a thousand and one types and sizes. Also available are hundreds of types of Braided Wire Rope Slings, assemblies, and many types of aircraft control cable, terminals and tie-rods.

Save time and money by getting the proper wire rope product for your needs. Macwhyte engineers will gladly consult with you, and make recommendations based on years of experience. Catalogs are available.

MACWHYTE COMPANY
2912 Fourteenth Avenue
Kenosha, Wisconsin

Manufacturers of Internally Lubricated PREformed Wire Rope, Braided Wire Rope Slings, Aircraft Cables and Assemblies, Monel Metal, Stainless Steel Wire Rope and Wire Rope Assemblies. Mill depots: New York • Pittsburgh • Chicago St. Paul • Fort Worth • Portland • Seattle San Francisco • Los Angeles Distributors throughout the U.S.A. 1058

Half-way To OUTER SPACE

and Back . . . in an ACME Weldment

Inside this steel test chamber men and equipment will face the impact of supersonic flight, *without leaving the laboratory*. Extremes of altitude, temperature, and humidity will yield their secrets to special equipment and instruments made by Bowser Technical Refrigeration of Terryville, Connecticut. To make possible the many unusual design features, to assure maximum strength with minimum weight, Bowser engineers specified that the complex shell be fabricated by Acme Welding . . . one more dramatic example of the part played in industry today by Acme weldments. Perhaps an Acme weldment can improve your product. Why not call on Acme *today*.

STEEL • STAINLESS STEEL • EVERDUR • ALLOYS

A.S.M.E. U68-U69 Qualified Welders • A.P.I.-A.S.M.E. Approved
Underwriters Label and Inspection Service • Navy Approved
National Board Approved • Hartford Steam Boiler Inspection Service

Send us your blueprints for a prompt quotation and ask for our informative folder, ACME PLANNED WELDMENT FABRICATION . . . ask for Bulletin B-1.

Acme WELDING

DIVISION of THE UNITED TOOL & DIE CO.

1030 New Britain Ave. • West Hartford 10, Conn.

CUSTOM FABRICATORS of PRESSURE VESSELS • MACHINERY BASES and COMPONENTS • WELDED ASSEMBLIES • STEEL TANKS

National Representative TRANSMISSION EQUIPMENT CO., Inc. • 441 LEXINGTON AVE., NEW YORK 17, N. Y.

This Week in Metalworking

STEEL
THE WEEKLY MAGAZINE OF METALWORKING

Vol. 135 No. 2 July 12, 1954

✓NEWS ✓PRODUCTION-ENGINEERING ✓MARKETS

Metalworking Outlook 59

As the Editor Views the News 63

Windows of Washington 74

Organization: The Key to Sound Management 78
Management Consultant M. K. Sheppard outlines some of the basic principles of good organization

Mirrors of Motordom 81

The Business Trend 85

Men of Industry 89

Technical Outlook 109

The Case for Cold Heading 110
Process originated in manufacture of bolts, screws; now is used for special items at high production rates, savings

Inert Gas Annealing Puts Zip in Aluminum Strip 112
Used at Scovill to control grain structure variables closely. Grain size spread minimized. Method is described

Humidity Cabinets Don't Tell the Whole Story 114
In corrosion testing, field evaluation continues the most reliable method of evaluation. Here's why

Progress in Steelmaking 120
Forging a King-Size Die Holder—Picture story of steps in processing a 55-ton ingot to 23-ton block to finished form

The Place for Vanadium 128
Vanadium's capabilities as an alloy still impressive. Thorough analysis essential to proper application selection

New Products and Equipment 153

The Market Outlook 169
Metal Prices and Composites begin on Page 170

Nonferrous Metals 172

Behind the Scenes	6	Foreign News	77
Letters to the Editors	10	Obituaries	92
Calendar of Meetings	27	Helpful Literature	164

Guide for Steel Buyers ..... Section Two

Editorial, Business Staffs—16. Advertising Index—197. Editorial Index available semiannually. STEEL also is indexed by Engineering Index Inc., 29 West 39th St., New York 18.

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Do a Better Job Faster...

cut cleaning costs RIGHT DOWN THE LINE!

METALWASH Degreasers are 4-Ways better

UNOBSTRUCTED TANK WALLS. The condensing coil and trough are recessed into a back compartment providing *superior vapor control, more efficient solvent reclamation,* and an *unobstructed working area.*

WATER SEPARATOR and PUMP CHAMBER, fabricated of stainless steel, are *unitized* for easy removal in minutes.

SIMPLIFIED MAINTENANCE. Service connections, clean-out openings, and controls are located at one end of machine.

DEMAND-TYPE WATER CONTROL. Out of Metalwash research has come the improved technique of water temperature regulation for greater control and water conservation.

All types of vapor degreasers, automatic or hand operated, are available in standard and special sizes.

WHAT YOU SHOULD KNOW ABOUT *Vapor Degreasing*

METALWASH has prepared an authoritative, illustrated booklet containing a description of the theory and operation of vapor degreasers plus diagrams and cutaway photographs of the three basic types of degreasers. **Write today for your Free copy.**

METALWASH®
WASHING PICKLING DRYING
PHOSPHATIZING DEGREASING

Metalwash Machinery Corporation
920 North Avenue, Elizabeth 4, N. J.
In Canada, Canefco, Ltd., Toronto, Ontario

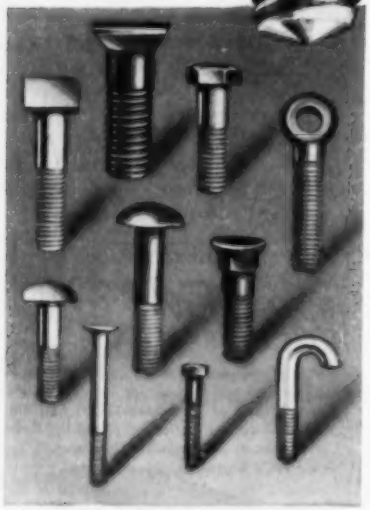
Threaded Specialties

lower cost
EYE BOLTS
by an
exclusive method

Among Pawtucket's many specialty products are these lower-cost eye bolts or "swing" bolts. Pawtucket's exclusive production method keeps cost low, dimensional accuracy unusually high and strength above standard.

Pawtucket eye bolts are made in standard sizes ¼" and larger, or to your specifications. In any size, you can depend on uniform Class 3 fit, if required.

All standard steels, stainless steels and non-ferrous metals, including Titanium



BETTER BOLTS SINCE 1882

PAWTUCKET
MANUFACTURING COMPANY
327 Pine St. • Pawtucket, R. I.
THE PLACE TO SOLVE YOUR BOLT PROBLEMS
T.M. REG.
"The Bolt Man"

behind the scenes

Job Very Well Done!

With this issue of STEEL, you received your personal copy of the "Guide for Steel Buyers." As you look at it in its attractive cover, you will find it difficult to imagine the time, effort, anxiety and plain hard work which spawned this useful package. So, if you will bear with us for a paragraph or two, we'd like to tell you some of the "behind the scenes" activities that made the "G for S B" possible.

Two guys and a gal are primarily responsible for bird-dogging this project through to a very happy conclusion. Vance Bell, assistant managing editor, and Bob Jaynes, associate editor, are the two guys; Peggy Bauman is the gal.

Through their miracle of organization and tireless follow-through, they have put together a quick-reference book covering over 460 individual products of the steel producing industry. Approximately 14,500 different entries appear in this guide, many of them listed by size of product, producer and mill point. The listings are arranged so that you can find products in a matter of seconds.

They tell us that approximately 200 producers of steel products spent well over 2000 man-hours of time organizing their material for inclusion in the "G for S B."

An interesting sidelight which made the preparation of this second edition of the "G for S B" somewhat easier than the 1951 effort is the fact that back in '51, very few steel companies had size catalogs. STEEL's 1951 guide pointed up the value of such reference books. Now, most companies have one or more size catalogs of their own. With all this, it still took six full months . . . more than 1800 man-and-girl-hours of time . . . to complete the 112-page guide you received as part two of this July 12 issue.

Add to this editorial effort the supplementary activities of the art and layout departments, the type setters, the printers, the bindery personnel and you begin to see in clearer perspective the magnitude of the job STEEL has been glad to produce for you.

A great big pat on the back to Bell, Jaynes and Bauman for an excellent job. And a sincere "thank you" to all the steel producing companies that helped them collect the material presented here.

What'll McCarthy Say Now?

We were wheeling down the Lakeshore drive en route to the paper mill this morning when the news commentator attracted us with the statement that the Army had finally figured out a way to save $1 million.

Instead of 102 different kinds of mimeographing paper, military paper-work experts must now select their stock from 17 specified brands. The choice of lead pencils, once made from well over 100 varieties, has been limited to 11. Yesterday, any one of 27 styles of office desks could be had. Today, the selection is limited to 5.

What's our Army coming to? How can an adjutant put his heart into his job when his latest creation in general orders has to be mimeographed on a paper which doesn't fit his C.O.'s personality. This business of saving a million dollars can be carried too far, can't it, Joe?

Over Sold?

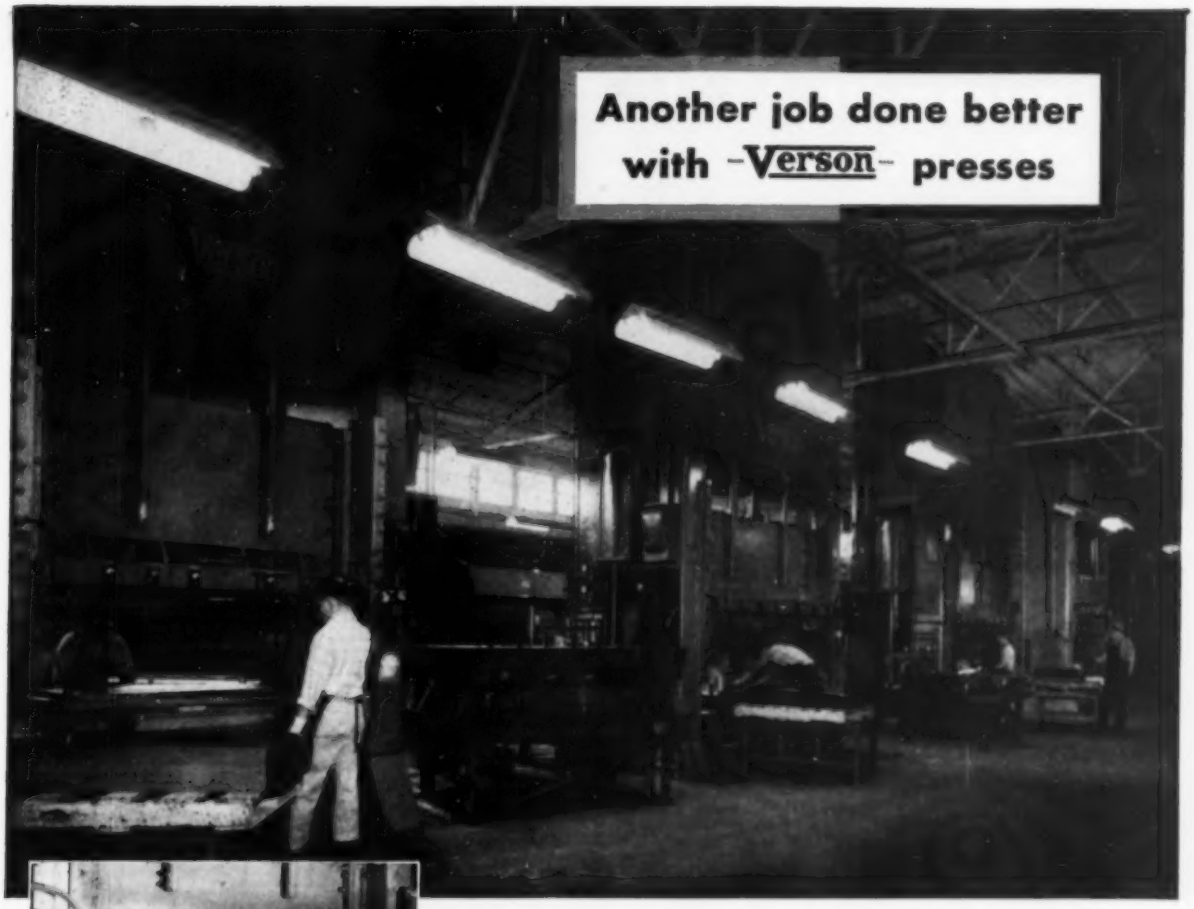
. . . A friend was telling us about the deluge of mail he has been receiving from a certain magazine extolling its many helpful features. From the sound of the letters he was made to feel a "must" compulsion to buy. Couldn't see how he had managed to do business successfully as long as he had without the benefit of this particular panacea for overworked business men. So he "Bit". That's his exact word.

Saw him a little while ago over a Kosher corned beef sandwich and asked him how the "cure-all" was working out. His answer was very short and very to the point:

"The character that wrote the sales letter should have written the magazine."

Shrdlu

(Metalworking Outlook—Page 59)



Above is a close-up of compressor mounting plates as they come from one of the large Verson mechanical presses at Amana.

Basic data on the entire Verson line is presented in Catalog G-53. Write for your copy, today. It may be the first step towards more efficient production of stampings.

A Verson Press for every job from 60 tons up.

Amana's New Facilities Feature this -Verson- Line-up

Prominent in the expanded stamping facilities of Amana Refrigeration, Inc., is the line-up of big Verson presses shown above. Among the biggest in use at Amana, they include four 350 ton full eccentric mechanical presses and a 600 ton hydraulic press. In addition Amana also uses one of Verson's smallest presses, a 150 ton open back inclinable.

Like progressive manufacturers of metal products everywhere, Amana has taken advantage of Verson's press building know-how to assure themselves of quality, efficiency and economy in the production of metal stampings.

The Verson line is complete, comprising virtually all types of presses and tooling. If you make anything requiring metal stampings, it will pay you to consider Verson.

Verson

ORIGINATORS AND PIONEERS OF ALLSTEEL STAMPING PRESS CONSTRUCTION

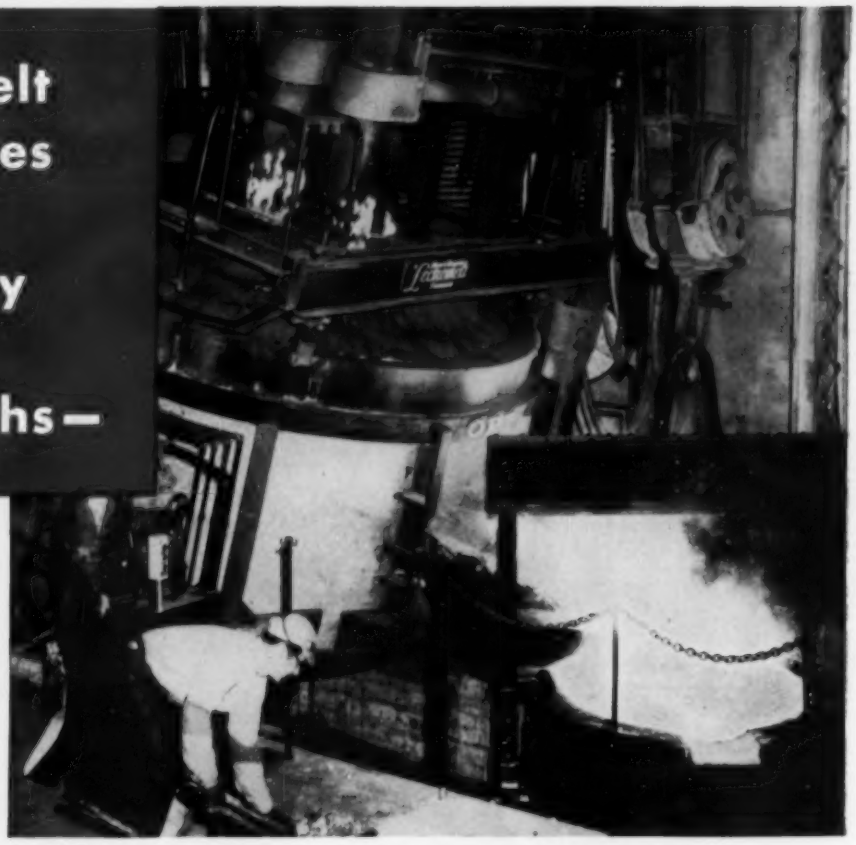
VERSON ALLSTEEL PRESS CO.

9318 S. KENWOOD AVENUE, CHICAGO 19, ILLINOIS • SO. LAMAR AT LEDBETTER DRIVE, DALLAS, TEXAS

MECHANICAL AND HYDRAULIC PRESSES AND PRESS BRAKES • TRANSMAT PRESSES • TOOLING • DIE CUSHIONS •

2 Lectromelt arc furnaces compete successfully with openhearths—

at Manitoba Rolling Mill Co. of Canada . . .



Manitoba Rolling Mill's new OPT Lectromelt is rated at 4½ tons per hour. It is ideally suited for making steel ingots for structurals, rounds and reinforcing bar produced by Manitoba.

Melting carbon steels

There's no question about the high quality of Manitoba Rolling Mill steels. Their two Lectromelt* Furnaces give them power to control temperature and analysis exactly. They meet order specifications easily. And they can duplicate specifications over and over again . . . even if orders require special alloying.

Melting is fast and precise in a Lectromelt Furnace. Down time is minimized because very little maintenance is required. Top-charging saves even more time . . . conserving power, furnace lining, electrodes and labor. What's more, when the workday is over a Lectromelt can lie idle all night without costing a penny.

Lectromelt's power supply and power regulation equipment is engineered specifically for each installation, assuring satisfactory operation. For top-charging, the roof lift and swing mechanism is separately mounted. Tilt mechanism is side mounted. Lectromelt's reduced inertia electrode mechanism gives you better control of electrodes.

A new Lectromelt could be your answer to improved plant efficiency. To obtain Lectromelt Furnace Bulletin No. 9, or to discuss the engineering or any characteristic of Lectromelt melting, smelting, refining or reduction furnaces, write Pittsburgh Lectromelt Furnace Corporation, 323 32nd St., Pittsburgh 30, Pa.

Manufactured in . . . GERMANY: Friedrich Kocks GMBH, Dusseldorf . . . ENGLAND: Birlec, Ltd., Birmingham . . . FRANCE: Stein et Roubaix, Paris . . . BELGIUM: S. A. Belge Stein et Roubaix, Bressoux-Liege . . . SPAIN: General Electrica Espanola, Bilbao . . . ITALY: Forni Stein, Genoa. JAPAN: Daido Steel Co., Ltd., Nagoya

*REG. T. M. U. S. PAT. OFF

WHEN YOU MELT... MOORE RAPID *Lectromelt*

FOR COMPLETE COST CONTROL
LET'S LOOK AT THE Kardex RECORD
"We can trace the improvements in our competitive position, better customer service, and steadily rising production norms, all or in part, to the highly detailed Remington Rand Kardex system we installed to control our cost records. What's more, since the cost of maintaining these records has been reduced by one-third through this new system, we expect it will pay for itself in the near future."
That's what Reed-Prentice Corporation,* the world's largest manufacturer of injection molding machines for the plastics industry, says about the Kardex Record.
Get free copy of the detailed story, "3 Records Into 1 Turns The Trick For Reed-Prentice Corp. — CH942." Write Remington Rand, Room 1771, 315 Fourth Ave., New York 10, N. Y.
Remington Rand
*Also makes 4 other major product lines of machine tools.

WITH A KIDDE CO_2 SYSTEM!

Let fire get a foothold, and a going concern is *gone*. Don't risk it. Install a Kidde Automatic CO_2 Fire-Extinguishing System, and fire won't stand a chance.

A Kidde System goes into action at the first sign of fire—releases clouds of CO_2 over the blaze, smothers fire almost as soon as it starts. And CO_2 leaves no mess to clean up later. It puts out the fire, then vanishes.

Protect flammable liquids, dip tanks, spray booths with a Kidde System. Let Kidde guard record vaults, machinery and electrical equipment.

And for on-the-spot protection, get Kidde portables. When fire strikes, just aim the horn, pull the trigger, and *swoosh!* No more fire.

Don't wait 'til your business is a cinder pile—Contact Kidde today.

Kidde

The words 'Kidde', 'Lux', 'Lux-O-Matic', 'Fyre-Freez' and the Kidde seal are trademarks of Walter Kidde & Company, Inc.

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760 Main Street, Belleville 9, New Jersey
Walter Kidde & Company of Canada, Ltd., Montreal—Toronto

LETTERS
TO THE EDITORS

Program with a Punch

William Nelson, acting president of ACF-Brill Motors Co., of which we are a division, was in my office today and saw a tear sheet of your article, "Now You Have To Sell," No. 1 in STEEL's 1954 Program for Management (Feb. 22, p. 91). He glanced through it and then instructed me to write for additional copies of this article to distribute to several members of our organization. The number required is eight.

Harold L. Morris
assistant chief engineer
Hall-Scott Motor Division
ACF-Brill Motors Co.
Berkeley, Calif.

Such a keen interest has been displayed in your article, "Now You Have To Sell," I am prompted to ask for 25 copies. I hope you can comply with this request in view of the heavy demand you must have had for this very interesting article.

J. Warren Behrens
chief analyst
Market Research Department
Watson-Stillman Co.
Roselle, N. J.

Your 1954 Program for Management is certainly a worthwhile series and has given us many ideas that can be used effectively.

G. C. Hill
assistant manager sales
District Sales Office
U. S. Steel Corp.
Indianapolis

We think you article, "Build Better Bosses," No. 2 in STEEL's 1954 Program for Management (Mar. 22, p. 81), is excellent and would like to obtain seven copies.

Robert R. Hendren
general sales manager
R. C. Remmey Son Co.
Philadelphia

I have just finished reading your article, "Automation: How Far Should You Go?" No. 3 in STEEL's 1954 Program for Management (Apr. 12, p. 87). This is an exceptional and worthwhile article and series.

J. E. Puckett
assistant purchasing agent
McQuay-Norris Mfg. Co.
St. Louis

Your article, "Integrate Your Distribution," No. 5 in STEEL's Program for Management (June 21, p. 113), was very excellent.

C. Rinelli
supervisor export territory
Chain Belt Co.
Milwaukee

Interest in the Motor City

In a recent "Mirrors of Motordom" (May 10, p. 86), you made reference to a limited-slip differential being developed by Lyeth Engineering Co. I would greatly appreciate any further information that is available concerning this differential or patents on it.

My interest is that I, too, am an inventor of a torque-basing differential

(Please turn to page 12)

now you can get a finish

by LAPOINTE BROACHING

far superior to any finish ever before obtainable . . .

and 400% increased tool life!

The reason? . . . smoothness of operation

through the ELECTRO-MECHANICAL DRIVE

This machine is massive, weighing something over 30 tons without tools. Slides are unusually heavy. The main drive gear, powered by a constant torque variable speed D.C. Motor, drives the broaches so smoothly that *you not only get an amazing finish but increased tool life as well.*

for HIGH PRODUCTION BROACHING

of these and other parts, you should get all the facts on this newest LAPOINTE Electric Drive Broaching Machine.

WRITE FOR BULLETIN DRVE-3

This LAPOINTE Double Ram Vertical *Electro-Mechanical Drive* Broaching Machine is producing a remarkably fine finish on S 816 steel plus 4 to 5 times greater tool life for one of the largest manufacturers of jet blades and buckets.

View during assembly

THE LAPOINTE MACHINE TOOL COMPANY

HUDSON, MASSACHUSETTS • U. S. A.

In England: Watford, Hertfordshire

HUDSON LAPOINTE MASS.

THE WORLD'S OLDEST AND LARGEST MANUFACTURERS OF BROACHING MACHINES AND BROACHES

for Special Service on Carbide "Specials"

GORHAM

GORHAM

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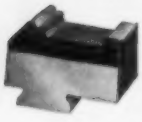

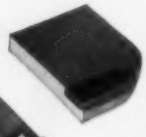

When your production machining problem dictates the use of special carbide tooling, your nearby Gorham Field Engineer can give you the right answers fast! He's an expert in the design and application of special cutting tools . . . and he provides a complete engineering service to determine your exact requirements.

He begins with your product, sketch or idea. He surveys your production operations and available equipment. He considers work material properties and required finishes and tolerances. He plots speeds, feeds and methods of tool driving. Then he develops practical design and metallurgical specifications for a special tool that's "tailor-made" for your application. And his recommendations are backed by Gorham's more than thirty years' experience in the design, manufacture and heat treatment of fine cutting tools.

Yes, your nearby Gorham Field Engineer is a helpful man to have around! If you haven't yet met him, write for his name, or send details of your problem direct, and we'll have him get in touch with you promptly.

Gorham TOOL COMPANY

"EVERYTHING IN STANDARD AND SPECIAL CUTTING TOOLS"

14401 WOODROW WILSON • DETROIT 3, MICHIGAN

WEST COAST WAREHOUSE: 576 North Prairie Ave., Hawthorne, Calif.

LETTERS

(Concluded from page 10)

on whch two U. S. patents (Nos. 2,624,213 and 2,674,135) have been issued and British and Canadian patents are pending.

I always enjoy reading Mirrors of Motordom.

Donald Schott
196-33 58th Ave.
Flushing, N. Y.

• *We suggest you write directly to Lyeth Engineering Co., 12859 Eight Mile Rd., Warren Township, Mich.—ED.*

Who Uses Adhesives?

Your column, Mirrors of Motordom, "Automen Stick with Adhesives, Develop Production Techniques" (May 24, p. 69), mentions using adhesives to fasten fractional horsepower motor laminations.

Can you inform us who is building motors this way?

John Laymon
Advanced Mfg. Development Section
Motor Department
General Electric Co.
Ft. Wayne, Ind.

• *Cord Lipe, sales manager, Cycleweld Division, Chrysler Corp., Trenton, Mich., says adhesives are being used to fasten fractional motor laminations by A-C Spark Plug Division and Delco Products Division, General Motors Corp.; and Sperry Gyroscope Co. For further information we suggest you contact Mr. Lipe.—ED.*

Keep STEEL Handy

STEEL is a publication which I keep handy for ready reference, as I find it most helpful in keeping informed on industry developments.

Otto Schroeder
general sales manager
Soule Steel Co.
San Francisco

The Point on Carbide Tools

Congratulations on the excellent job you did on the article, "Pick the Right Carbide Tool" (June 7, p. 124). It is easy to read and right to the point.

Bennett Burgoon Jr.
Kennametal Inc.
Latrobe, Pa.

Address for PHMI

Please send me the address of the Prefabricated Home Manufacturers' Institute, mentioned in your article, "Prefabricated Houses: More Sales for Metalworking" (May 24, p. 55). That article was very interesting.

T. R. Naimy
8902 Dorrington Ave.
West Hollywood, Calif.

• *The address is Prefabricated Home Manufacturers' Institute, 908 20th St. N.W., Washington 6.—ED.*

Need a long-life chain for furnace service?

Aluminum billets move through normalizing furnace at 900° F on Link-Belt Class SM-584 chain with "K" attachments. Cast center links are connected to bar steel sidebars by steel pins locked in place.

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THESE combination chains are designed and built for the demanding service of moving materials through normalizing and heat treating furnaces. Their sturdy, well-proportioned members maintain fit despite hard usage at high temperatures.

The extra life built into these chains is typical of every chain in the complete Link-Belt line. Accurate control of raw materials and manufacturing processes is your assurance of uniformity and long life.

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toolmakers prefer this CINCINNATI shaper

17 cubic foot Revco, one of many Food Freezer models built by Revco, Inc., Deerfield, Michigan.

Revco, Inc., producers of Food Freezers, state their toolmakers prefer using this 20" H. D. Cincinnati Shaper. They like the convenience of all controls located at the operator's position and the amazing speed of the electro-magnetic clutch and brake. They like the assurance provided by the 50 P.S.I. automatic lubrication. They like the very high accuracy obtained in shaping jigs and fixtures, drawing, forming and blanking dies.

Write for the new illustrated catalog N-6 on Cincinnati Shapers.

Photo courtesy Revco, Inc., Deerfield, Michigan

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USS HIGH STRENGTH STEELS

Roof purlins of USS COR-TEN steel are 28% lighter, cost 17.5% less than carbon steel

● By taking advantage of the higher strength of USS COR-TEN steel, The Steelcraft Manufacturing Company, Rossmoyne, O., manufacturers of Standard Steel Buildings, was able to substantially reduce both the weight and the cost of the purlins used in the rigid-frame steel buildings they have made for the U.S. Government and for commercial and industrial use.

Although the 20-ft. purlin sections made of 14 gage USS COR-TEN steel have the same load carrying capacity as 12 gage carbon steel, they are 30.4 lbs. lighter and cost $2.63 less each.

The manufacturer estimates that the rigid-frame construction itself reduces cost about 20% when compared to conventional construction, and when COR-TEN steel is used, costs are still further reduced about 25%.

USS COR-TEN steel also ensures other important economies. Its lighter weight not only makes handling and assembly easier but materially reduces freight costs, both when the steel is shipped from the mill and again when the building sections are transported to the erection site.

Because COR-TEN steel has 4 to 6 times the resistance to atmospheric corrosion as carbon steel, and because paint adheres more tightly to it, the COR-TEN steel purlins will outlast ordinary steel construction and require minimum maintenance through the years.

USS MAN-TEN steel reduces weight, assures greater strength and durability in Cardwell "Trailerig"

● Extreme portability which keeps moving costs to a minimum is obtained in this well-known portable oil drilling rig which combines the draw works assembly, including the mast, with the trailer frame.

This compact, completely unified machine has capacity for 5,000 foot slim hole drilling and 10,000 foot workover. It carries a 90- or 96-foot mast which can be telescoped and folded down so that the "Trailerig" in roading position is only 8 feet wide, 13½ feet high and 59 feet long.

To keep weight as low as possible without sacrificing ruggedness, the Cardwell Mfg. Co. of Wichita, Kansas, has built the bridge-type trailer frame and working platform of high strength USS MAN-TEN steel and reduced weight 6,000 lbs. as compared to carbon steel construction.

Additional weight has been saved in the mast in which all structural members are of 8" x 11.5 lb. MAN-TEN steel channels. These are considerably lighter than if carbon steel of equal strength had been used.

But USS MAN-TEN steel does more than save weight in this construction. Its higher fatigue strength—40% greater than carbon steel—and its greater strength and abrasion resistance pay off in increased durability which minimizes maintenance and helps to keep the "Trailerig" steadily on the job when making hole.

USS

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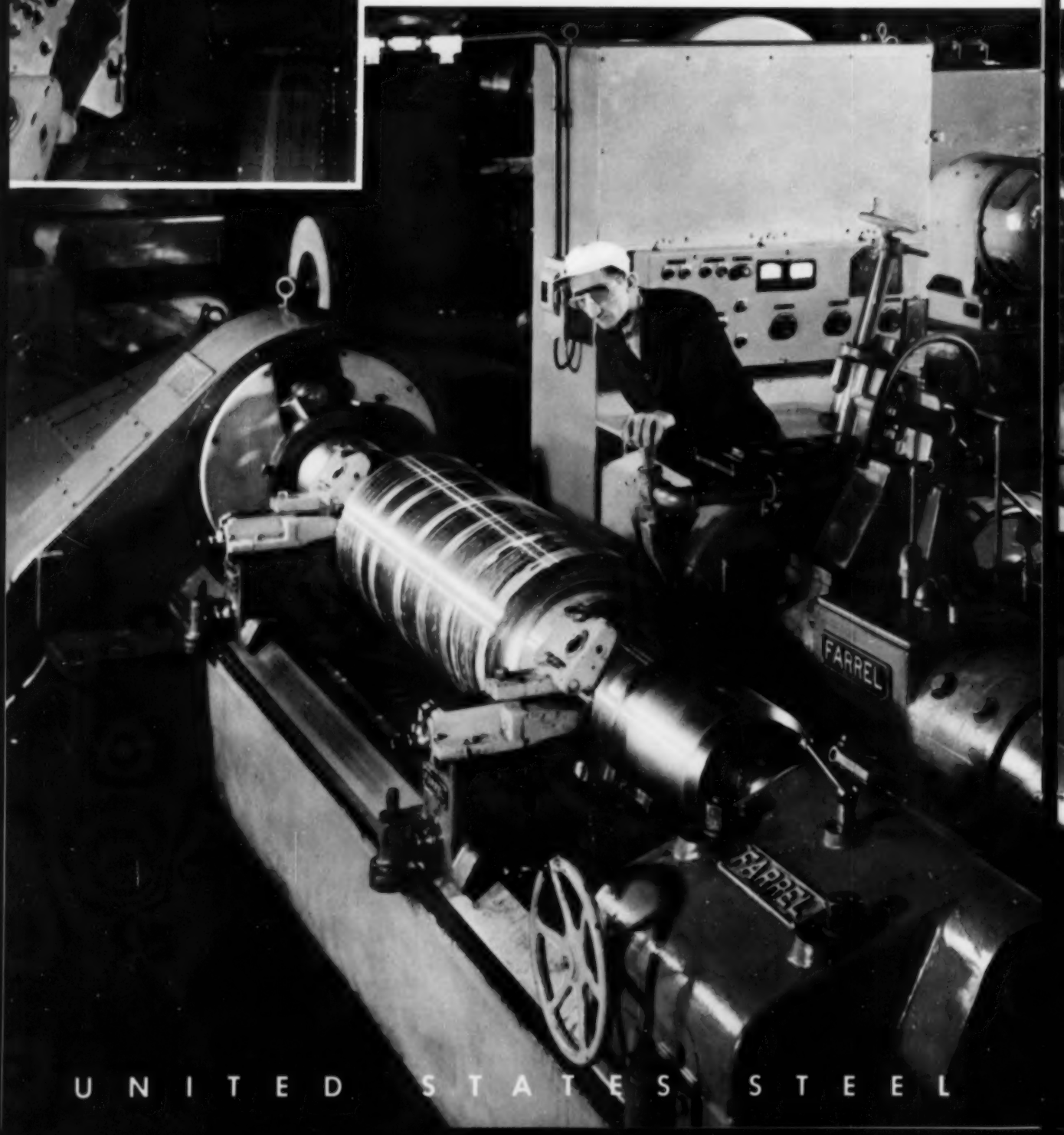
UNITED STATES STEEL

"We just can't miss,

says Joseph Perun,



UNITED STATES STEEL

s, with machines like these"

USS ROLL GRINDER

At our Homestead Forgings Division a premium product is forged steel rolls for cold rolling of metals. Specially trained men do nothing else but grind and inspect these rolls—an obvious precaution when you consider the exacting tolerances. For a master at the roll grinding trade, look to Joseph Perun, a U. S. Steel employee for 19 years.

According to Mr. Perun, "We grind almost all of our rolls on machines of this type because they take away the guesswork. When I'm working down to a thousandth of an inch, I must have a machine that is accurate and easy to operate. These machines are equipped with magnetic filters on the coolant system to remove steel particles."

Despite such precision equipment, a lot of human skill is required to grind a roll. Mr. Perun, for example, dresses his own grinding wheels and the grinding speeds must be carefully selected to prevent burning or softening of the roll body. When these rolls are installed in cold reduction mills, they must stand up under severe service many hours before re-grinding. And we are proud that many USS Forged Steel Rolls have been in continual service for years with periodic rehardening.

When you buy any USS Quality Forging, you can count on men like Joseph Perun to do the critical jobs. If you'd like more information, write today for our free 32-page booklet that describes USS Quality Forgings. Address United States Steel, Room 4386, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

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For floors complete or center strip . . .
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U S S Multigrip Floor Plate has the strength to carry heavy loads. Used structurally, or for covering concrete or wooden floors, it provides a safe, permanent shield for the floor . . . reduces maintenance costs. Multigrip lends itself readily to forming, bending, or even the most complicated fabrication. And regardless of the way the plate is laid, it provides maximum skid resistance in all directions. The flat-topped risers are comfortable underfoot . . . tend to lessen fatigue. For safety's sake use Multigrip Floor Plate wherever sure footing is essential.

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- Flangettes
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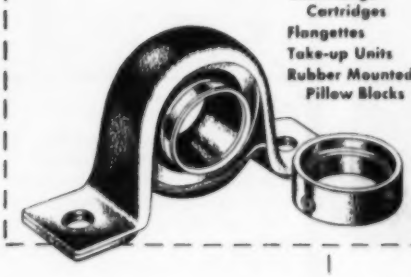
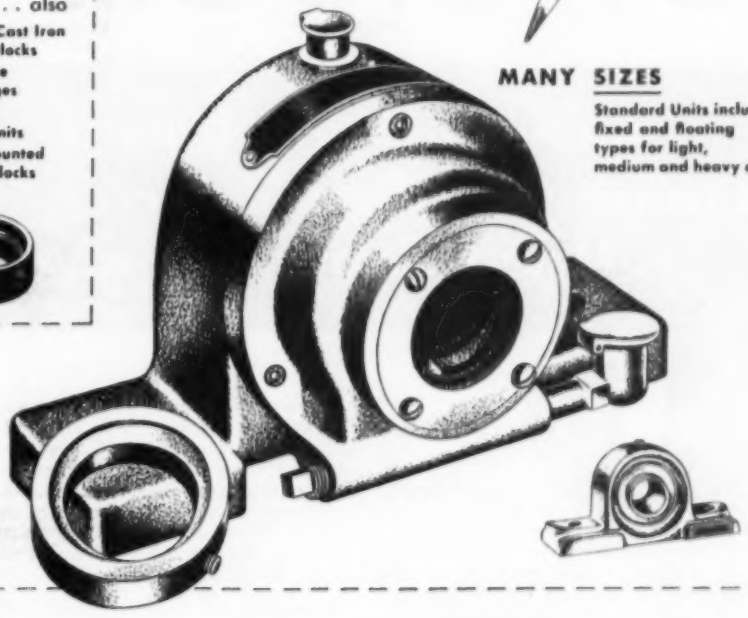


MANY SIZES

Standard Units including fixed and floating types for light, medium and heavy duty.



If you are considering the application of power transmission units on products or plant equipment, you have an extremely wide selection of standard types and sizes in the Fafnir line. Chances are you can get Fafnir units to meet your requirements exactly . . . cost-wise as well as design-wise . . . and all of them incorporate precision bearings made to uniformly high quality standards.

Fafnir Ball Bearing Power Transmission Units feature the famous Fafnir Wide Inner Ring Bearing with Self-Locking Collar . . . easiest of all to install. Unique shaft-locking action eliminates the need of set screws, adapters or lock nuts . . . and frictionless seals positively retain lubricant, repel contaminants.

The breadth and scope of the Fafnir Line is an important factor in the growing preference for Fafnir Ball Bearing Power Transmission Units. Get complete details from your distributor. The Fafnir Bearing Company, New Britain, Conn.

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BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

to cut refining costs of steel...

A major contribution to the Steel Industry

Kaiser Engineers Acquires Exclusive U.S. Rights to the Oxygen Converter Process*

Open hearth quality at Bessemer cost

Kaiser Engineers has acquired the U. S. Rights to design, construct and license this new proven European process to produce high quality steel.

Recognized as a significant development in steel making, the *Oxygen Converter Process* (Brassert Oxygen Technique) is producing steel of open hearth quality with production rates, thermal efficiencies and low cost comparable to the Bessemer Converter.

Tailored for the U.S.

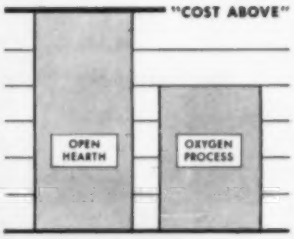
Extensive metallurgical studies show that oxygen steel meets the exacting demands of U. S. fabricators. Kaiser Engineers has solved the problems incident to American practice and is prepared to offer a complete *Oxygen Converter Process* and auxiliaries designed for the American Steel Industry. Such auxiliaries include not only the tonnage oxygen plants but facilities especially designed for the collection and treatment of dust laden gases.

Advantages:

Compared to open hearth practice, the advantages of the *Oxygen Converter Process* include low capital investment, low operating cost and definite savings in both installation space and auxiliary equipment.

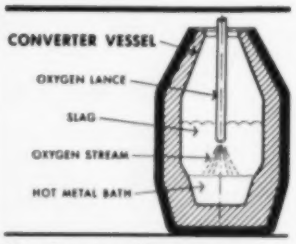
Compared to an air-blown Bessemer Converter, the high thermal efficiency of the *Oxygen Converter Process* permits the charging of larger percentages of scrap (up to 3 times as much) than normal converter practice.

* From Brassert Oxygen Technique—Zurich, Switzerland



Operating Cost

The U. S. practice for the Oxygen Converter Process has been calculated to produce a net saving of $3.00 per ton in "cost above" over the average "cost above" for the open hearth process.



Production Rate

In a Bessemer-like vessel, high purity oxygen is impinged directly onto the top of the molten metal bath. 35-ton heats are being produced at the rate of 1½ heats per hour.

Investment

One 35-ton oxygen converter will match in production capacity three 175-ton open hearth furnaces at half the estimated capital cost.

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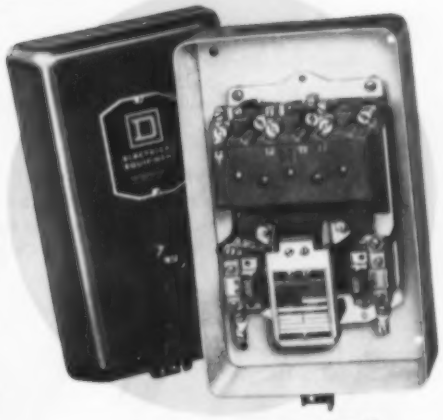

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Johns-Manville announces the development of new **SIL-O-CEL 16L** *Insulating Fire Brick...*

Lompoc, California, where Johns-Manville mines and processes diatomaceous silica insulating materials

Combines outstanding physical and thermal properties for furnace service to 1600F

Check these properties of SIL-O-CEL 16L

Maximum service temperature	1600F, back-up or exposed
Approximate density	33-35 lb per cu ft
Transverse strength	60 psi
Cold crushing strength	350 psi
Linear shrinkage	0.7 percent at 1600F
Reversible thermal expansion	less than 0.1 percent at 1600F
Thermal conductivity (Btu in. per sq ft per F per hr at indicated mean temperatures)	0.92 at 500F 1.07 at 1000F 1.22 at 1500F

1—has less than 0.1% reversible thermal expansion at 1600F

2—provides high load-bearing strength

3—for direct exposure or back-up service

Here is a new development of Johns-Manville insulation and refractory research. Its exceptional characteristics provide important savings in furnace construction. Made of diatomaceous silica, Sil-O-Cel* 16L Insulating Brick is light in weight . . . has low thermal conductivity . . . high structural strength. And where furnace linings are subjected to severe heat shock or where high load-bearing properties are needed, Sil-O-Cel 16L offers outstanding performance.

Sil-O-Cel 16L is now available. Samples will be sent on request. Also available without obligation is Booklet IN-115A, which describes Sil-O-Cel 16L and other J-M Insulating Brick and Insulating Fire Brick for service to 3000F. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay Street, Toronto 1, Ontario.

*Sil-O-Cel is a Johns-Manville registered trade mark

Replaces SIL-O-CEL Natural Brick

The development of Sil-O-Cel 16L Insulating Brick has resulted in the discontinuance of Sil-O-Cel Natural Brick. The outstanding properties of Sil-O-Cel 16L make it the ideal replacement for Sil-O-Cel Natural Brick for back-up use. In addition, the properties of Sil-O-Cel 16L Brick extend its use to exposed service applications.

JM

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CALENDAR
OF MEETINGS

July 12-15, American Electroplaters' Society: Annual convention, Hotel Statler, New York. Society address: 445 Broad St., Newark 2, N.J. Executive secretary: P. Peter Kovatis.

July 13-15, Western Plant Maintenance Show & Conference: Pan Pacific Auditorium, Los Angeles. Information: Clapp & Poliak Inc., 759 Monadnock Bldg., San Francisco 5.

July 22-23, Truck-Trailer Manufacturers Association Inc.: Summer meeting, Edgewater Beach hotel, Chicago. Association address: 1024 National Press Bldg., Washington 4. Managing director: John B. Hulse.

August 2-4, National Tool & Die Manufacturers Association: Board of trustees and committee meeting, Grand hotel, Mackinac Island, Mich. Association address: 907 Public Square Bldg., Cleveland 13. Executive secretary: George S. Eaton.

August 8-12, American Society of Sanitary Engineering: Annual meeting, Muehlebach hotel, Kansas City, Mo. Society address: 4716 Ewing Ave. S., Minneapolis. Secretary: Walter A. Dunn.

August 16-18, Society of Automotive Engineers Inc.: National West Coast meeting, Hotel Statler, Los Angeles. Society address: 29 W. 39th St., New York 18. Secretary: John A. C. Warner.

August 25-27, Western Electronic Show & Convention: Pan Pacific Auditorium and Ambassador hotel, Los Angeles. Business manager: Mal Mobley Jr., 344 N. La Brea Ave., Los Angeles 36.

August 30-September 3, Automotive Electric Association: Annual fall meeting, Vanss Springs hotel, Vanss Springs, Alberta, Canada. Association address: 802 Michigan Bldg., Detroit. Executive secretary: S. W. Potter.

September 1-16, International Electrotechnical Commission: Golden jubilee meeting, University of Pennsylvania, Philadelphia. Information: D. E. Denton, Public Relations Dept., American Standards Association, 70 E. 45th St., New York 17.

September 4-8, Pressed Metal Institute: Annual fall meeting, Manoir Richelieu hotel, Murray Bay, P.Q., Canada. Institute address: 2860 E. 130th St., Cleveland. Managing director: O. B. Werntz.

September 7-9, Industrial Truck Association: Fall meeting, Greenbrier hotel, White Sulphur Springs, W. Va. Association address: Washington Loan & Trust Bldg., Washington 4. Secretary: William Van C. Brandt.

September 7-9, National Fluid Power Association: Fall meeting, Hotel Commodore, New York. Association address: 1618 Orrington Ave., Evanston, Ill. Secretary: Barrett Rogers.

September 8-10, American Society of Mechanical Engineers: Fall meeting, Schroeder hotel, Milwaukee, Wis. Society address: 29 W. 39th St., New York. Secretary: C. E. Davies.

September 8-10, Porcelain Enamel Institute Inc.: Shop practice forum meeting, Urbana-Lincoln hotel, Urbana, Ill. Institute address: 1346 Connecticut Ave., N.W., Washington 6. Secretary: John C. Oliver.

September 10-11, Metal Powder Association: Fall closed meeting, The Homestead, Hot Springs, Va. Association address: 420 Lexington Ave., New York 17. Secretary: Robert L. Ziegfeld.

September 11-14, Packaging Machinery Manufacturers Institute: Annual meeting, Grove Park Inn, Asheville, N. C. Institute address: 342 Madison Ave., New York 17. Secretary: Miss Helen L. Stratton.

September 12-15, National Metal Trades Association: Eastern plant management conference, Sagamore hotel, Lake George, N. Y. Association address: 122 S. Michigan Ave., Chicago 3. Secretary: Charles L. Blatchford.

September 12-17, American Chemical Society: Fall meeting, Statler hotel, New York. Society address: 1155-16th St. N. W., Washington 6. Executive secretary: Alden H. Emery.

NOW- A Quick, Easy-to-Use Guide to Efficient Machining

Here's the first simplified system for selecting carbide tool grades. Kennametal's new grade selection method assures top tool performance on every machining job. It's easy to use and eliminates guesswork because grades are grouped according to their wear characteristics (edge-wear and crater-resistant); also according to relative strength with strong, intermediate and hard grades included in each group. These eight Kennametal grades meet all machining requirements.

Kennametal's grading system is unmatched in the industry for simplicity. Any experienced machinist can use it to quickly adjust grades for better tool performance. For example: If K3H is being used and crater is no problem, a switch to K4H, which is more edge-wear resistant, will provide longer tool life. Conversely, if K4H is being used and crater is excessive, a switch to K3H would improve tool life.

Your Kennametal representative will gladly help you apply this grade selection system to your machining operations. He can also help apply these eight grades to "wear spots" in your product, your processing lines, or any place a hard, wear-resistant metal is needed. Just give him a call. Kennametal Inc., Latrobe, Pa.

*Registered Trade Marks

KENNAMETAL
CEMENTED CARBIDE TOOLING
THAT INCREASES PRODUCTIVITY

SALES OFFICES IN PRINCIPAL CITIES

A-15

are Precision-made to improve Your Production

Important savings are available in using B&L top quality Wide Flat Sections. These fine Bar Steels are **cold drawn** to close tolerances and smooth surface finish to meet the critical tests of the man with the "mike" on every count.

They come in a convenient range of ready-to-use sizes ranging from over 6" to 12" wide and ¼" to 2" thick . . . always a quick and economical substitute for expensive castings, forgings or hot rolled plates which may require planing to size.

B&L Extra Wide Flats are a "must" on every precision job. They help reduce your machining and assembly costs wherever you can apply them for jigs and fixtures, die plates and punch pads, patterns and machinery parts.

COLD DRAWING develops increased strength and machinability in B&L Extra Wide Flats.

BAR STRAIGHTENING is controlled to quite accurate commercial straightness.

BLISS & LAUGHLIN, INC.

GENERAL OFFICES: HARVEY, ILLINOIS

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***FOUR PLANTS:* HARVEY, ILL. • DETROIT, MICH. • BUFFALO, N. Y. • MANSFIELD, MASS.**

BL SINCE 1891

BIRDSBORO STEEL FOUNDRY AND MACHINE CO. *says....*

"THIS MACHINE IS well engineered ...easy on the operator

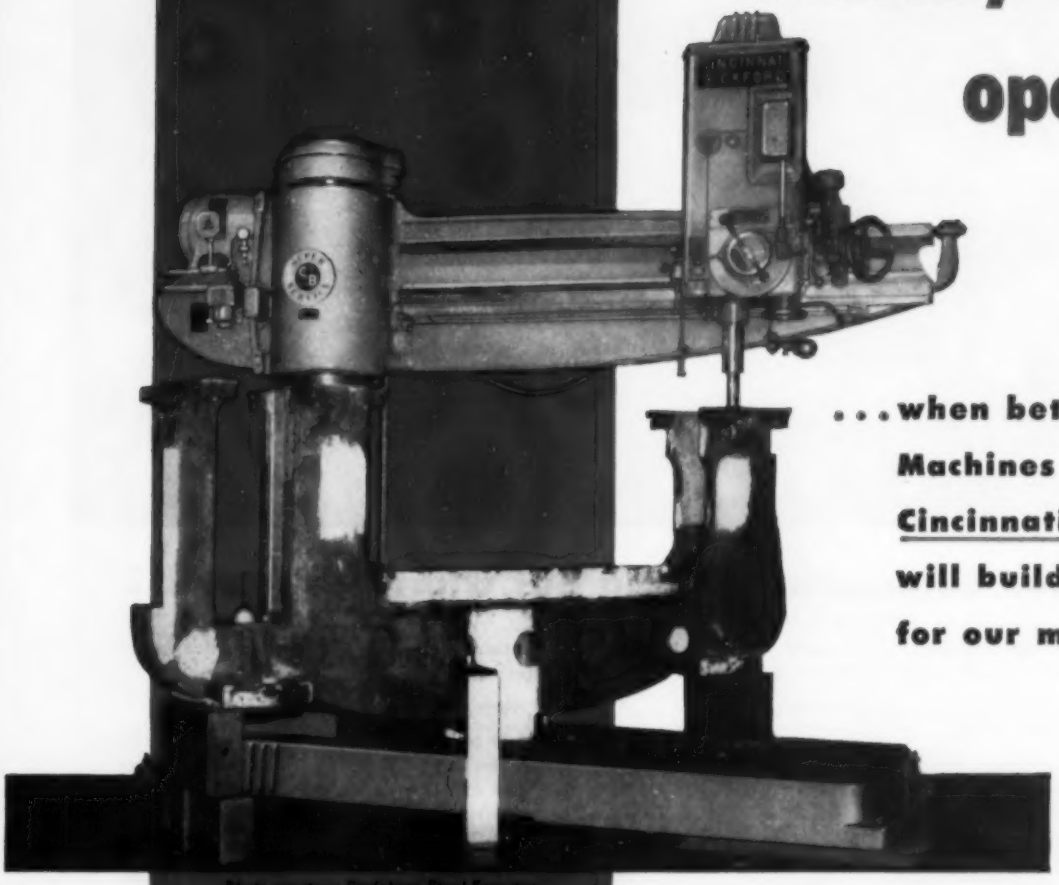


Photo courtesy Birdsboro Steel Foundry & Machine Company, Birdsboro, Penn.

...when better Drilling Machines are built, Cincinnati Bickford will build them for our money"

A 40% cost saving is effected by this Cincinnati Bickford Super Service Radial Drill.

This 10,600 lb. carbon cast steel bottom roll housing for steel plate leveler is being spot faced to a 5" dia. 3/8" deep. Floor to floor time was 25 minutes and now only 15 minutes.

Handling with finger touch ease this Bickford Radial is giving a wonderful performance.

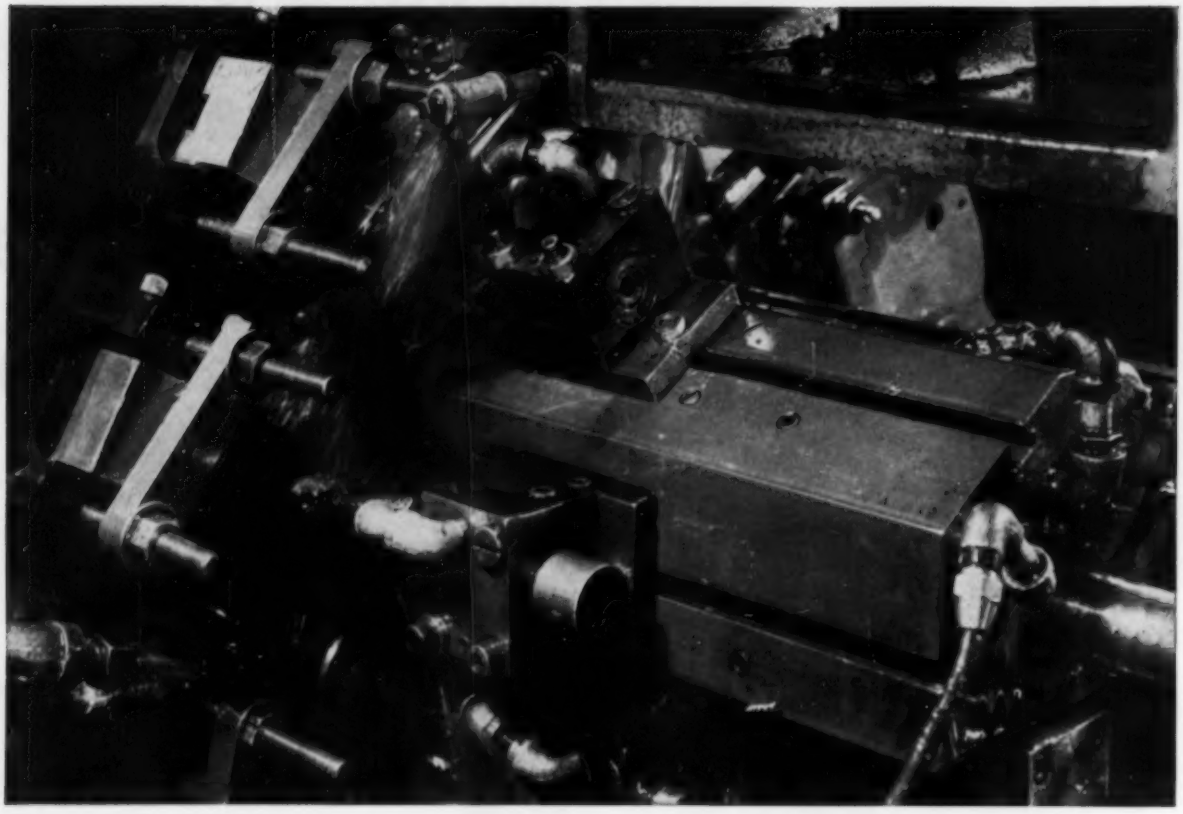
Investigate these fine machines. Write for Catalog R-29.

CINCINNATI BICKFORD

RADIAL AND UPRIGHT DRILLING MACHINES

THE CINCINNATI BICKFORD TOOL CO.

Cincinnati 9, Ohio, U.S.A.



Are your automatics turning out what they could?

Let's say you've checked the machine itself. The tools. The setup. The feeds and speeds. And you find them O.K.

You may still be missing your peak production because of the steel you're using.

Many manufacturers have found that switching to Republic Cold Drawn Alloy Steels has given them the qualities they want in steel parts. And it's also given them the cost-cutting advantages that are built into high-speed automatics. Here's how it works.

Designers can make full use of Republic Cold Drawn Alloy Steel's high strength and uniform structure. Production men get the ideal combination of wear-ability and strength from the uniform hardenability and toughness of alloy steel.

And you get uniform machinability as well.

Republic's 3-D Metallurgical Service is ready to help you get the best out of Republic Cold Drawn Alloy Bars. A phone call to your nearest Republic District office may uncover the answers to some of your tough cost and production problems.

REPUBLIC STEEL CORPORATION
Union Drawn Steel Division • *Massillon, Ohio*
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REPUBLIC COLD DRAWN ALLOY STEEL BARS

Other Republic Products include Carbon and Stainless Steels—Sheets, Strip, Bars, Wire, Pig Iron, Steel and Plastic Pipe, Bolts and Nuts, Tubing

New Norton Cut-Off Wheels Get Industry's O.K.!

Reports from every section of the country tell how the freer cutting, longer lasting R50 and B9 add the profit-boosting "TOUCH of GOLD"

Here's what they say about—

The R50

143 more cuts
California mine bit manufacturer rates R50 rubber cut-off wheel best ever used. Gave 735 cuts to competitive wheel's 592, for 24% more wheel life.

Better performance
Connecticut machine tool manufacturer says R50 wheel outperformed competitive wheel, cutting freer on wet cutting of high carbon tool steel. (see photo)

120% longer life
Indiana construction equipment manufacturer reports R50 wheel produced 216 cuts, 120% more than competitive wheel's 98 cuts.

No burn or breakage
Kentucky manufacturer of garbage disposal units found R50 wheels eliminated the breakage problem and produced a cut free of burr and burn.

450 more cuts
Missouri manufacturer of coal mining equipment used an R50 wheel to cut 12 bars at 90 cuts per bar, totalling 1080 cuts. Beat best previous wheel's record of 7 bars, 630 cuts, by 70%.

Freer cutting, longer lasting
Massachusetts manufacturer of pneumatic tools reports R50 wheel 25% more durable while producing an equal quality of cut. Freer cutting, with less of usual rubber wheel odor.

25% more cuts
Connecticut machine manufacturer reports R50 wheel produced 25% more cuts than competitive wheels, with equal freeness and cleanness of cut.

The B9

72% more durable
Michigan engine manufacturer says B9 wheel produced 250 cuts over competition's 145, lasting 72% longer.

Lasted three times longer
Ohio metal working company reports B9 gave three times the service life of competitive wheel, with excellent cutting performance.

40% more cuts
Pennsylvania die manufacturer found B9 wheel outproduced competitive wheel by 40% giving 252 cuts as against 180.

36% production increase
Missouri metal company tells how B9 gave 75 cuts to competition's 50-55, proving 36% longer lasting.

Wheel life doubled
New York manufacturer cutting tubing and bars says B9 wheel with F sides lasted twice as long as previous wheel and cut a wide range of metals. (see photo)

150% over competition
Maryland metal working company says B9 wheel gave 125 cuts, topping competitive wheel's 50 cuts by 150%.

42% more cuts
Pennsylvania construction equipment manufacturer averaged 125 cuts with B9 wheel, 42% over competitive wheel's average of 88 cuts.

85% longer life
California forge and pipe foundry reports B9 lasted 85% longer than any other wheel.

27% more durable
Ohio aircraft manufacturer, cutting a wide variety of bar stock, says B9 wheel delivered 27% longer life than competitive wheels.

Performance reports like these are coming in every day, telling how the new Norton R50 and B9 cut-off wheels are setting new records for extra long service life and improved cutting action. Check them carefully, then judge for yourself how much your own cutting-off operations will benefit by these outstanding wheels. And remember: for every cut-off job you do, there's a Norton cut-off wheel that will add the money-saving "Touch of Gold".

See Your Norton Distributor for the cut-off wheels you need. Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities, listed under "Grinding Wheels" in your classified phone directory. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

Making better products . . . to make other products better

The New Norton R50 rubber bonded cut-off wheel is designed especially for wet-cutting of ferrous or non-ferrous bar stock up to 6" diameter. Built-in chip clearance — a great advancement in this type of wheel — is one of its special "Touch of Gold" advantages that assure freer, faster cutting with maximum strength and service life.

The New Norton B9 resinoid bonded cut-off wheel is made with either smooth sides or with the rough "F" sides for more clearance in the cut. It is a high production wheel, cutting free and cool with minimum burning. It will give you long, economical "Touch of Gold" performance in the widest range of ferrous and non-ferrous applications. W-1570

NORTON

and its BEHR-MANNING division

NORTON: Abrasives • Grinding Wheels • Grinding Machines • Refractories
BEHR-MANNING: Coated Abrasives • Sharpening Stones • Pressure Sensitive Tapes

SAVE 50%

INCREASE PRODUCTION

with HELIARC TRADE-MARK Welding

This unit is equipped with a water cooled, high speed HELIARC HW-13 torch—ideal for machine welding.

Stator packs, thin sheet steel stampings joined together, form the laminated enclosure around the armature in electric motors. These parts have been riveted, bolted, and even welded together in the past...But now using HELIARC welding, they are produced faster and more economically than ever before.

Costs ½ a cent or less to HELIARC weld a stator which previously cost manufacturers one cent to rivet.

Maximum electrical efficiency is obtained with HELIARC welded stators—a quality difficult to obtain from riveted or bolted stators.

Welding speeds up to 60 in. per minute are now possible. HELIARC torches in a mechanized setup weld a complete stator pack in a matter of seconds.

HELIARC, sigma, and UNIONMELT welding processes —brought to industry by LINDE's service engineers, form a top notch fabricating team in operations for small shops or huge production lines. From carbon steel to complex alloys, whatever your welding needs are, your local LINDE representative will be glad to help you determine the most efficient, economical welding process for that work. Call him today for more information.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
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In Canada: DOMINION OXYGEN COMPANY
Division of Union Carbide Canada Limited, Toronto

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PRODUCTION UP...COST DOWN!

on TRANSMISSION REAR BEARING RETAINERS

...AT 85% EFFICIENCY

27 PARTS per HOUR

DRILLED, REAMED, SPOT-FACED and TAPPED on a

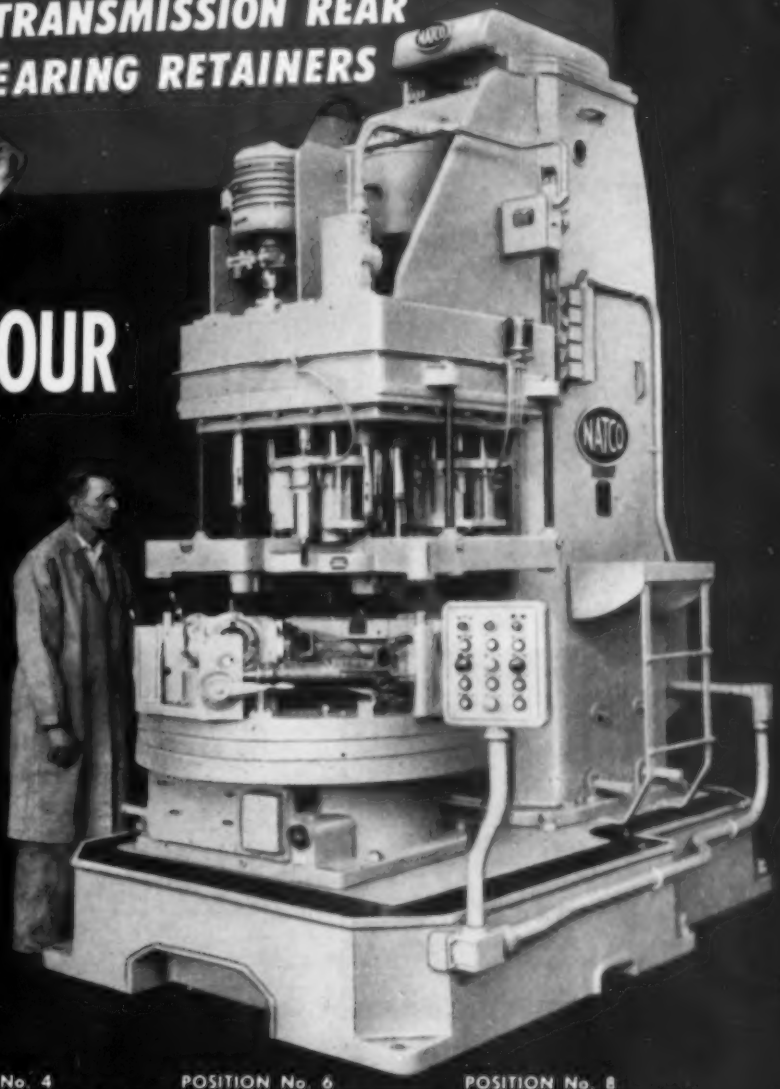
NATCO

D4A HEAVY DUTY VERTICAL

HOLESTEEL

COMBINATION

DRILLER and TAPPER



The machine is provided with a 4-position fixture, mounted on an 8-position indexing table, and arranged to accommodate 2 parts in different locations in each position while performing the following operations:

POSITION No. 1
Remove and load 2 parts

POSITION No. 2
Location "A," Drill 1 hole
Location "B," Idle

POSITION No. 3
Location "A," Ream 1 hole
Location "B," Idle

POSITION No. 4
Location "A," Drill 1 hole
Location "B," Idle

POSITION No. 5
Location "A," Combination spot-face 2 holes
Location "B," Combination drill, countersink 2 holes

POSITION No. 6
Location "A," Combination finish spot-face 2 holes
Location "B," Tap 2 holes

POSITION No. 7
Location "A," Combination align ream 2 holes
Location "B," Idle

POSITION No. 8
Location "A," Tap 1 hole
Location "B," Idle

Call a Natco Field Engineer

to help you solve your problems in Drilling, Boring, Facing and Tapping

NATCO

NATIONAL AUTOMATIC TOOL COMPANY, INC., Richmond, Indiana

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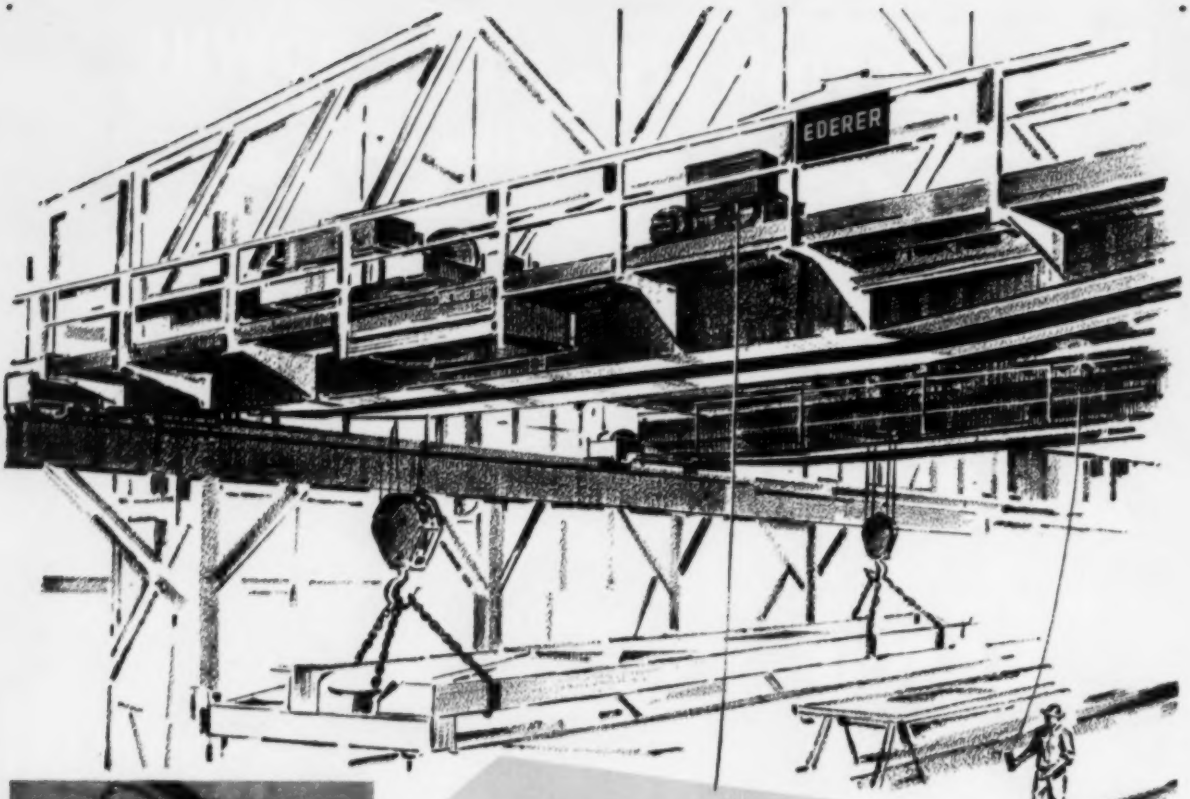
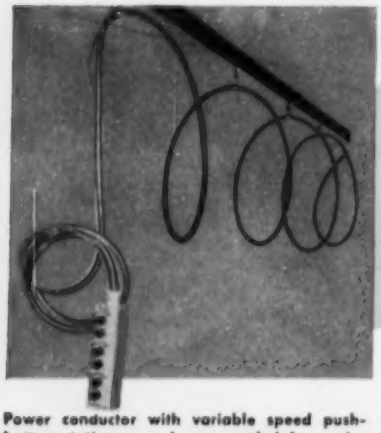


Your yardstick of crane performance—cost-per-ton handling



Power conductor with variable speed push-button station, may be suspended from wire or track; gives operator freedom to walk to or away from crane load.

Bridge drive is mounted on rigid, single-unit base. Brake is hydraulic. Flexible coupling connects motor to high-speed input shaft; is enclosed in oil-tight cover. Motor is totally enclosed, wound rotor, drip-proof.

Materials handling by overhead crane provides economy in this important industry function. To gain the greatest economy, EDERER "job-engineers" each crane to the exact requirements of your plant—your industry. The basic "plus" that makes for lowest cost-per-ton handling is EDERER's heavy duty construction throughout—with oversize parts—plenty of safety margin—most efficient operating speeds. It pays off in full capacity performance—minimum maintenance. EDERER can "job-engineer" a crane to handle materials economically for you. Why not send for the new EDERER crane catalog—Bulletin CR-610?

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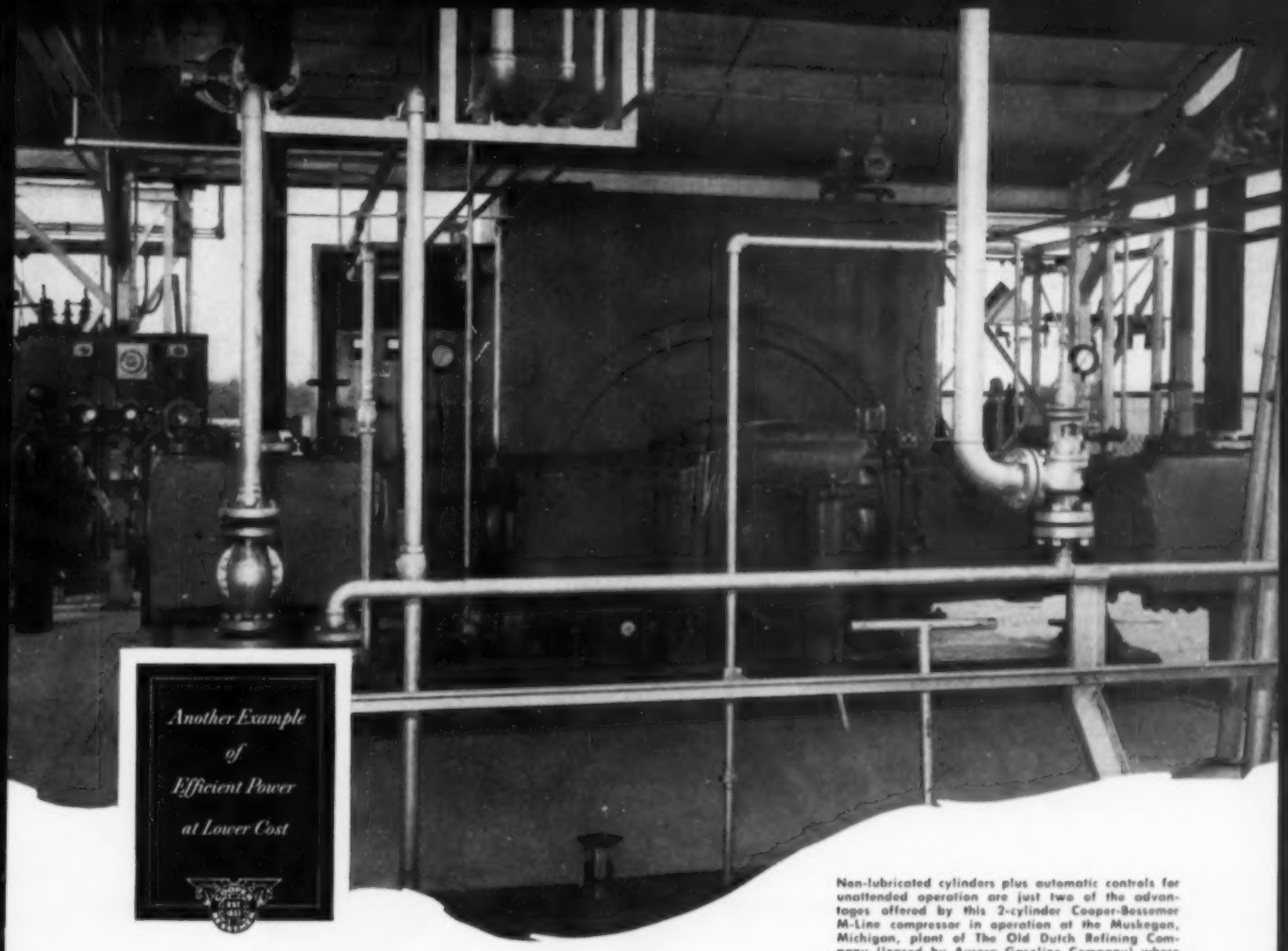
EDERER CRANES

EDERER ENGINEERING COMPANY • 2935 First Ave. S., Seattle 4, Wash.

Export Division: 301 Clay St., San Francisco 11, Calif.

. OVER 30 YEARS "JOB-ENGINEERING" CRANES FOR INDUSTRY



Non-lubricated cylinders plus automatic controls for unattended operation are just two of the advantages offered by this 2-cylinder Cooper-Bessemer M-Line compressor in operation at the Muskegon, Michigan, plant of The Old Dutch Refining Company (leased by Aurora Gasoline Company) where the UOP Platforming process is in use.

"HYDROGEN COMPRESSES CLEAN"

... with Cooper-Bessemer's non-lubricated cylinders

RECYCLING millions of cubic feet of hydrogen a day for the UOP Platforming of low-octane gasoline, demands continuing efficiency from a smooth working compressor that will not contaminate the recycle hydrogen. That is one of the reasons why The Old Dutch Refining Company, leased by Aurora Gasoline Company, recently installed a 2-cylinder Cooper-Bessemer FM compressor in their modern plant in Muskegon, Michigan.

To avoid contaminating hydrogen with oil in the recycle gas, Cooper-Bessemer successfully developed a non-lubricated compressor cylinder.

Operating against micro-smooth hardened cylinder liners, these 8" diameter carbon pistons require no lubrication whatever. With a mirror finish, the cylinder bores reveal no excessive wear.

No matter how exacting or complex your compressor problems, check the advantages offered by Cooper-Bessemer M-Line compressors. For dependability and money-saving operation, you can rely on Cooper-Bessemer — one of America's oldest engine builders offering the latest in engineering advancements.

MOUNT VERNON, OHIO

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GROVE CITY, PENNA.

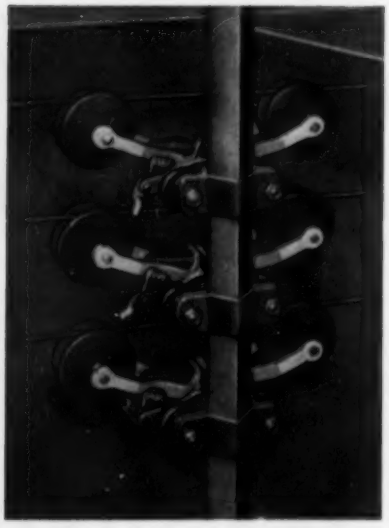
New York City • Seattle, Wash. • Bradford, Pa. • Chicago, Ill. Houston, Dallas, Greggton, Pampa and Odessa, Texas Washington, D. C. • Shreveport, La. • San Francisco, Los Angeles, Calif. • St. Louis, Mo. • Gloucester, Mass. • New Orleans, La. • Tulsa, Okla. • Cooper-Bessemer of Canada Ltd., Edmonton, Alberta—Halifax, Nova Scotia.

DIESELS • GAS ENGINES • GAS-DIESELS • ENGINE-DRIVEN AND MOTOR-DRIVEN COMPRESSORS

GRAPHITAR.

current collector wheels for overhead electric cranes

GRAPHITAR current collector wheels increase operating efficiency, reduce maintenance costs and give longer service in this difficult application



Excellent conductors of electricity, GRAPHITAR (carbon-graphite) collector wheels for overhead electric cranes provide numerous advantages over ordinary metal wheels. GRAPHITAR is self-lubricating, making bushings unnecessary and completely eliminating the need for greasing. GRAPHITAR minimizes pitting, arcing and burning, thus putting an end to dead spots in the line that reduce operating efficiency. GRAPHITAR wears exceptionally well and will give longer service than ordinary metal wheels. GRAPHITAR is chemically inert and will not be affected by fumes, heat, cold, rain or snow. For complete information, write us today

OUR 100th YEAR

184

THE UNITED STATES GRAPHITE COMPANY

DIVISION OF THE WICKES CORPORATION • SAGINAW, MICHIGAN

Production facts you should know about ALCOA® aluminum and magnesium castings

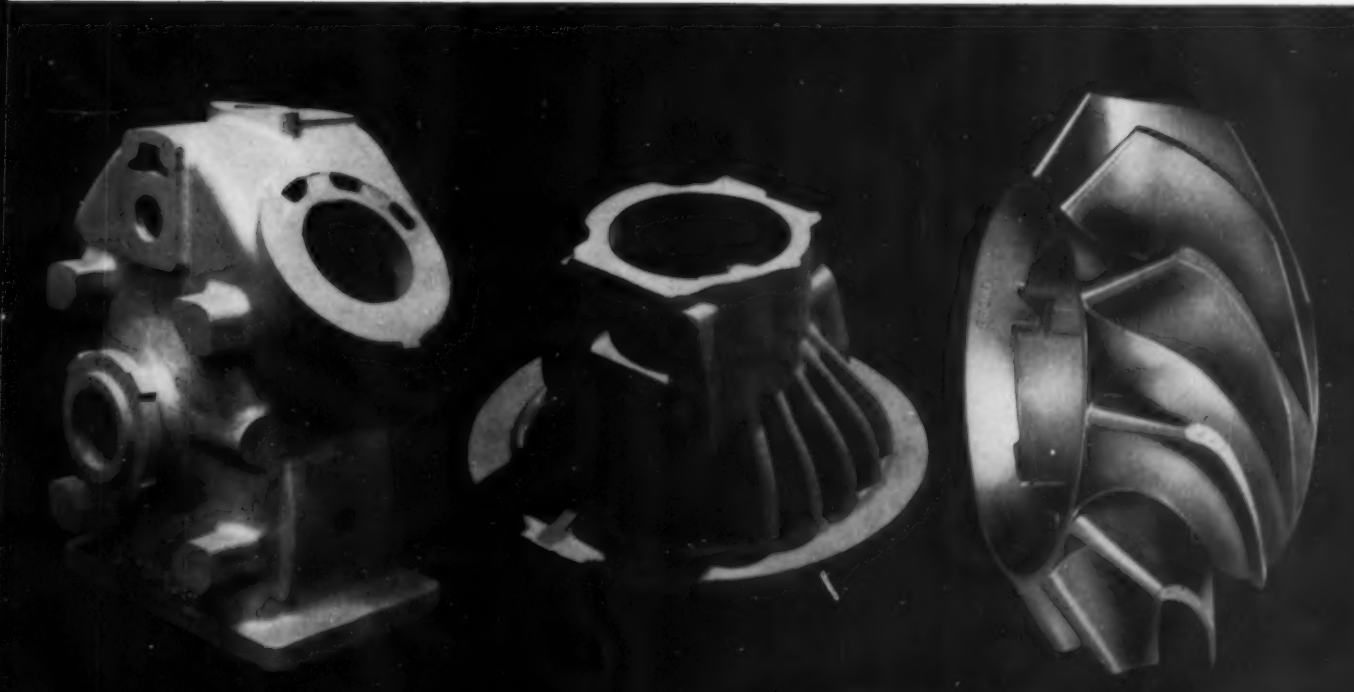
Latest process techniques and metallurgical advances in Alcoa foundries now make possible stronger, and more intricate castings

In 1953, over 1 million, 200 thousand net tons of primary aluminum were produced—an all-time high. While it is true that much of this metal was fabricated by newer processes, nearly *30 per cent*, or 650 million pounds of that aluminum went into sand, die and permanent mold castings. Still more went into modifications of the basic processes—plaster, investment and centrifugal.

This is not surprising in view of new techniques which now make it possible for us to cast stronger and larger shapes of intricate configuration in Alcoa plants and foundries. Such shapes contribute significantly toward eliminating high-cost "bits and pieces" construction. For example, we're now casting, in sand (plaster cores), hydraulic elements and driving bells for heavy-duty torque converters used in oil well drilling rigs and ship propulsion; permanent mold casting 600-pound spindle bodies; and die casting entire automobile clutch housings.

Metallurgical advances have been made as well. Highly stressed or cyclically loaded airframe sections often ruled out the use of castings. But, a new Alcoa-developed alloy, when used in the heat-treated condition, provides a higher yield strength and better elongation than any of the previous casting alloys. Parts with these improved mechanical properties, mass-produced to close tolerances by the permanent mold process, should find extensive use in airframe structures.

The following pages provide current information on what's being done at Alcoa foundries with aluminum and magnesium castings and suggested tips on alloy selection and design.

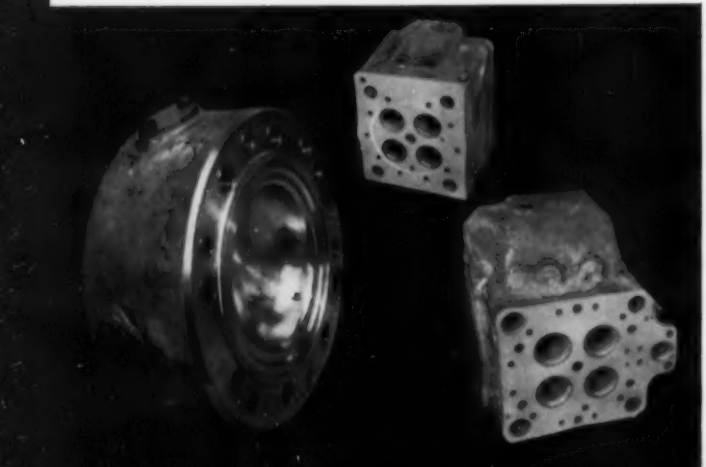


The casting processes and their applications

ALCOA PLASTER CASTINGS

Smoother surfaces and greater dimensional accuracy can be achieved with plaster casting than with any of the three previous methods. Once limited to small parts, plaster casting is rapidly coming of age. Tolerances of plus or minus .005 inch per inch are not unusual. This process is particularly suited to making thin, intricate shapes possessing good mechanical properties.

Parts such as these used in heavy-duty torque converters weigh up to 135 pounds and are nearly three feet in diameter. The intricate impeller blades, which must be smooth for even oil flow, are perfect in every detail as they leave the mold. Mold costs, though higher than for sand castings, are justified since simple cleanup and machining for fit are the only subsequent operations necessary.



ALCOA SAND CASTINGS

Most versatile of the casting methods, sand casting is generally used to make large, intricate shapes. But small to medium-sized parts adaptable to high-speed molding equipment can be produced in large quantities at low cost. Dimensional tolerances can be held to plus or minus $\frac{1}{32}$ inch.

Because of aluminum's high thermal conductivity, temperatures on the surface of this cylinder head do not build up to damaging levels. As a result, fuel injection systems in diesel engines function better. Spark plugs in gas engines last longer. Exhaust valves last longer in both. Sand-cast aluminum cylinder heads weighing up to 650 pounds (for engines) with a 21½-inch bore have been produced in our foundries.

ALCOA DIE CASTINGS

Alcoa is now producing die castings that vary in weight from a few ounces up to 20 pounds and more and measure up to 84 inches in length. Tolerances of .0015 inch per inch are being maintained (and sections as thin as .045 inch).

Part shown here is a heat pump component used in air conditioning compressor units. Cast in thinner sections than is possible in heavy metal, less subsequent machining is required. An added advantage is light weight—aluminum parts weigh about ⅓ of their cast iron counterparts, and magnesium even less—reducing handling costs in production and shipping.

ALCOA PERMANENT MOLD CASTINGS—Where great quantities of identical shapes are to be produced, permanent mold casting is frequently employed. Permanent mold castings have higher mechanical properties, better pressure tightness and greater uniformity than sand castings. Tolerances are good at plus or minus 1/64 inch, plus .002 inch per inch. In some cases, ½ inch in five feet has been achieved.

These bearings are used on the roll necks of steel mills where the extreme pressures require a good bearing material. Measuring 20 inches high, 24 inches wide, these castings weigh 225 pounds each. Wall thickness is one inch. Even in permanent mold castings of this size, surfaces are smooth and clean, as cast.

alloy selection

Of the more than 35 Alcoa Aluminum and approximately 11 magnesium alloys used in the casting processes, there is one which will suit your needs particularly well. For example, there is A132, an Al-Si-Ni-Mg alloy. At high temperatures, particularly from 500 to 600° F, it has excellent mechanical properties and a low coefficient of thermal expansion. Further, it has good machinability. For these reasons, it is often used for automotive and diesel pistons.

Another is 214, an Al-Mg alloy. It has excellent resistance to corrosion and tarnish with good combinations of mechanical properties. Because it responds well to Alumilite* finishing, it frequently is employed in dairy and food-handling equipment, cooking utensils and similar applications.

Magnesium alloys containing rare earths or thorium combine very light weight with good strength at elevated temperatures. The coefficient of expansion of the magnesium alloys is, however, approximately ⅓ higher than that of most aluminum alloys.

Keep in mind that each aluminum and magnesium alloy possesses particular characteristics suited to certain jobs. There is a right alloy for high strength, good electrical and thermal conductivity, weldability, machinability, castability.

finishes

Alcoa Aluminum and Magnesium Castings can be finished by all possible methods . . . mechanical, chemical or electrochemical. Usually, however, magnesium castings are chemically treated in a simple chrome pickle. Both metals can be painted, but magnesium castings require a little better surface preparation. Electrochemical finishes can be applied, such as the Alcoa-developed Alumilite finish, which put a file-resistant surface on aluminum.

Aluminum castings can be plated with any commercial metal—chromium, zinc, nickel, copper, brass, silver and gold. Electroplating often is justified from both a performance and cost standpoint.

*Trade Name of Aluminum Company of America.

Production tips

Alcoa Aluminum and Magnesium Castings, because they can be made in complex shapes to close tolerances, frequently require only simple cleanup and turning for fit. When additional operations are called for, they can be done easily because of the good machinability and weldability of most Alcoa casting alloys. Light weight of Alcoa Castings—at least one-third lighter than their heavy-metal counterparts—permits higher machining speeds when inertia forces are controlling factors and magnesium machines even faster than aluminum. Remember, however, that because aluminum and magnesium "spring" more than other metals, care should be taken when clamping or chucking so that the piece is not distorted.

Here are a few tips which, if followed, will make secondary operations you may perform on aluminum castings easier:

MILLING—use heavy-duty, coarse-tooth, plain-type cutters with spiral teeth. Spiral angles should range between 20 and 30 degrees with the teeth undercut to provide a top rake of 10 to 20 degrees. The spiral angle promotes progressive cutting along the cutting edge while the coarse teeth provide ample space for chip formation.

DRILLING—standard twist drills having 24 to 28 degree spirals are used for drilling thin stock or shallow holes, but for holes deeper than about six times drill diameter, a drill with a spiral of 40 to 50 degrees should be used. Twist drills similar to the standard drill with large, deeply cut and polished flutes produce excellent results.

REAMING—almost any type of reamer can be used on Alcoa Aluminum or Magnesium Castings. Flutes can be straight, but spiral flutes usually produce better results. Flutes spiraled in the direction of tool rotation cut freely, but cut too rapidly into the piece. Reamers spiraled opposite to direction of rotation are preferred.

THREADING—ground-thread-type hand and machine taps produce smooth, accurate threads in aluminum. Flutes should be undercut to provide top rake of 10 to 20 degrees at the leading edge, deep and wide for chip clearance.

FILING—coarse, deeply cut, curved-tooth files are excellent for general-purpose work on aluminum. Pitch should be about 10 teeth per inch for good clearance of filings. A long-angle lathe file is good for finish-filing aluminum. Files for this type work usually have a pitch of 14 to 20 teeth per inch, cut to a side rake angle of 45 to 55 degrees.

MACHINING—wide range of cutting feeds, with speeds ranging all the way to 20,000 feet per minute are possible with aluminum or magnesium. Generally speaking, from two to seven cubic inches of metal per minute can be removed from the work for each horsepower that is available. Use more rake on cutting tools and allow more space for chips than when machining steel. Design tools so that chips are directed away from the work, with cutting edges sharp, free of burrs or wire edges.

GRINDING—for rough work, use aluminous abrasives from No. 14 to No. 36, or resin-bonded wheels of medium hardness and grit sizes of 24 to 30. For finish grinding operations use a softer, vitrified bonded silicon-carbide wheel having a somewhat smaller grit size. Wheel speeds up to 6000 fpm have been used with good results.

WELDING—techniques used in welding Alcoa Castings are similar to those used for sheet and other wrought products. Because they are frequently complex shapes having thin web sections, care should be taken to limit heat application to avoid loss of heat-treated characteristics.

BRAZING—aluminum castings can be done by torch, furnace and molten flux methods. Cleaning, fluxing, furnace time and temperature, as well as joint design, are much the same as in brazing wrought shapes.

COST—of the casting as it comes from the mold must, of course, be right. Frequently, Alcoa engineers are able to suggest design modifications which make that cost lower. Moreover, the casting skill developed by Alcoa production teams over 66 years ensures against rejects, ensures that you will not have to operate a repair department for defective castings.

At all Alcoa foundries—Bridgeport, Cleveland, Buffalo, Detroit or Vernon, California—and die casting plants at Chicago and Garwood, New Jersey, casting specialists will work closely with you in design and alloy selection.

Your next step

Considerable savings can be effected simply by following the production tips mentioned here. But, actually, the more a production engineer can learn of foundry practice, the more aware he will be of ways and means of effecting savings in casting costs. A good way to do this is to write for a free copy of Alcoa's book, *Casting Alcoa Alloys*. And for more about practices in machining aluminum, write for *Machining Alcoa Aluminum*, a newly produced book covering nearly every subsequent operation that you might perform on Alcoa Castings. You can get your copies simply by writing us on your company letterhead telling us your job function.

In the meantime, if you have any specific questions about aluminum or magnesium castings, there is an Alcoa sales engineer near you ready to give you the answers. His office is listed under "Aluminum" in the classified section of your telephone directory. Whether you plan on buying Alcoa Aluminum or Magnesium Castings within the next week, month or year, don't hesitate to use his time and talents freely. That's his job. ALUMINUM COMPANY OF AMERICA, 1994-G Alcoa Building, Pittsburgh 19, Pennsylvania.

see our catalog in
PLANT ENGINEERING FILE
or write for copy

This KampLite Lantern throws new light on a familiar manufacturing problem . . .

NEW PART REQUIRED

Make it or Buy it?

The new KampLite is a real advancement in lantern design. The lamp is mounted below the tank, puts more light where you want it, eliminates shadows.

American Gas Machine Co., Division of Queen Stove Works of Albert Lea, Minnesota, recently faced a familiar problem in modern manufacturing . . . should they invest in the personnel, equipment, and time necessary to produce in their own plant the tanks for their newly designed KampLite . . . or would it be more economical and expedient to purchase the completed tanks from an outside source.

After consideration of all factors Burgess-Norton was selected for production of these tanks. Working together, American Gas Machine and Burgess-Norton engineers redesigned the tank for peak production efficiency and quality control, combining stampings and screw machined parts through hydrogen-copper brazing and projection welding.

Results for American Gas Machine Company:

Capital investment in new equipment was eliminated

Personnel and equipment procurement delays obviated

Additional floor space was not necessary

Manufacturing know-how contributed to a better tank

Costs were 15% less than American Gas had estimated for production of the tanks in their own plant

COMPLETE FACILITIES

FROM DESIGN THROUGH PRODUCTION FOR BETTER PARTS AT LOWER COSTS

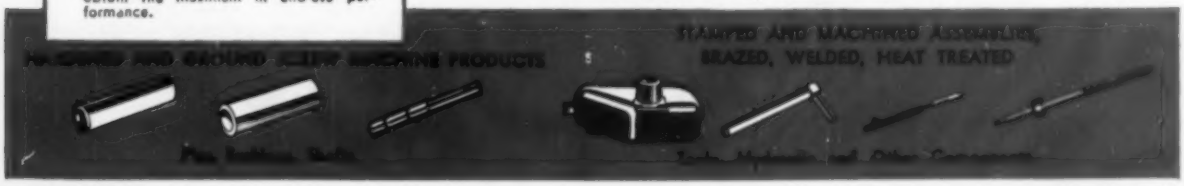
The high standard of quality required by industry today begins long before actual production. An experienced staff of engineers and metallurgists, working with the finest equipment, test, examine, and constantly check materials, heat treating and metal-working methods to obtain the maximum in end-use performance.

Burgess-Norton facilities and equipment are extremely diversified for the economical production of a wide range of precision parts, and include complete engineering, development, and metallurgy departments. This engineering service is available to you without obligation. If you have a parts production problem, we believe it will pay you to check into Burgess-Norton facilities. Send prints, specifications, or samples . . . or, if you prefer, one of our sales engineers will call, at your convenience.

BURGESS-NORTON MFG. CO.

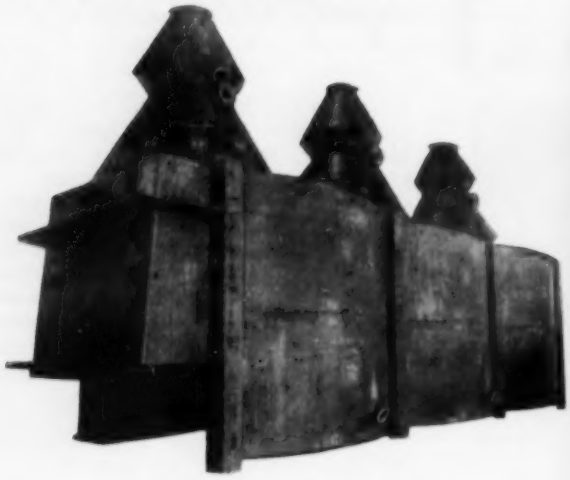
GENEVA, ILLINOIS

Serving Industry For Over 50 Years



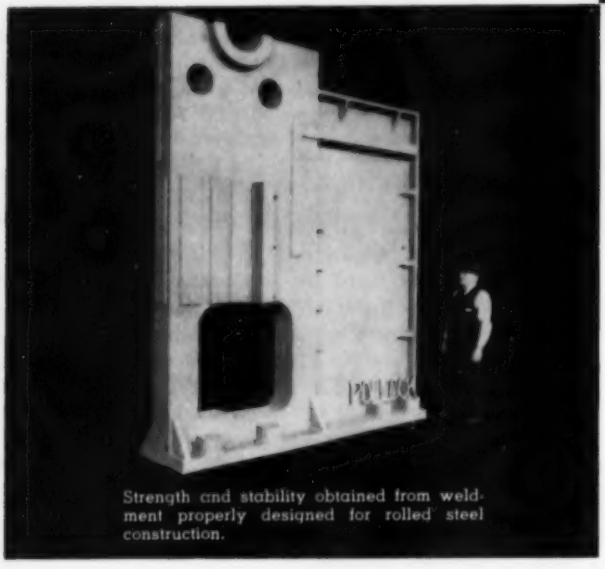
Complete Facilities

for all steel plate fabrication and erection

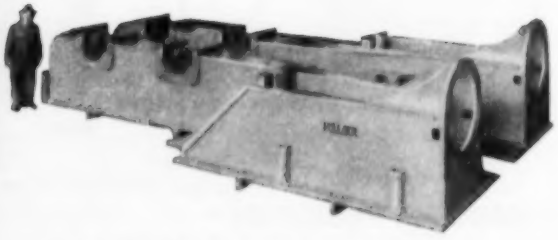


Intricate light gauge steel construction requiring precision fitting.

Complicated pipe connection including carefully fitted hi-carbon liner plates.



Strength and stability obtained from weldment properly designed for rolled steel construction.



Heavy weldment replacing steel casting, making better job and with considerable savings.

BLAST FURNACES • HOT METAL CARS AND LADLES
CINDER AND SLAG CARS • INGOT MOULD CARS
CHARGING BOX CARS • WELDED OPEN HEARTH LADLES

Your steel plate work of all kinds is in safe hands at The William B. Pollock Company. Pollock methods, machines and men have served the steel industry since 1863.

Pollock's modern production techniques and experience help cut your costs on all steel plate work. Precision machines are employed in forming, flame cutting, welding and machining plate from ¼" to 7" thick. If your weldments have finished surfaces or are joined to machined castings, Pollock can do the entire job for you . . . we are prepared to erect in the field the steel we fabricate. Your inquiries are invited.

STEEL PLATE CONSTRUCTION • ENGINEERS • FABRICATORS • ERECTORS

THE WILLIAM B. POLLOCK COMPANY

Since 1863

YOUNGSTOWN, OHIO

For easier blanking or forming...depend on the uniformity of

WEIRTON

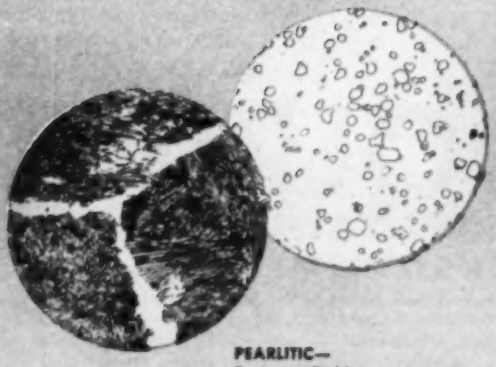
High-Carbon Strip Cold-Rolled Spring Steel

The requirements of high-speed cold forming or blanking are met consistently by Weirton cold-rolled spring steel. Formulated to exact specifications for each job, it makes the operation easy and economical for products in which high fatigue resistance is essential.

To an unusual degree, Weirton high-carbon strip cold-rolled spring steel possesses these highly important characteristics:

- **Uniform chemical and physical properties**
- **Exact consistency of grain structure**
- **Accurate response to heat treatment**
- **Exceptional uniformity of gauge and width**
- **Controlled decarburization limits**

It is supplied with the desired chemical composition and for specific heat treating and hardness ranges in strips up to seven inches wide.



SPHEROIDIZED—
Annealed, soft and ductile. Ideal for cold forming operations.

PEARLITIC—
Temper-rolled in controlled hardness and strength for blanking.

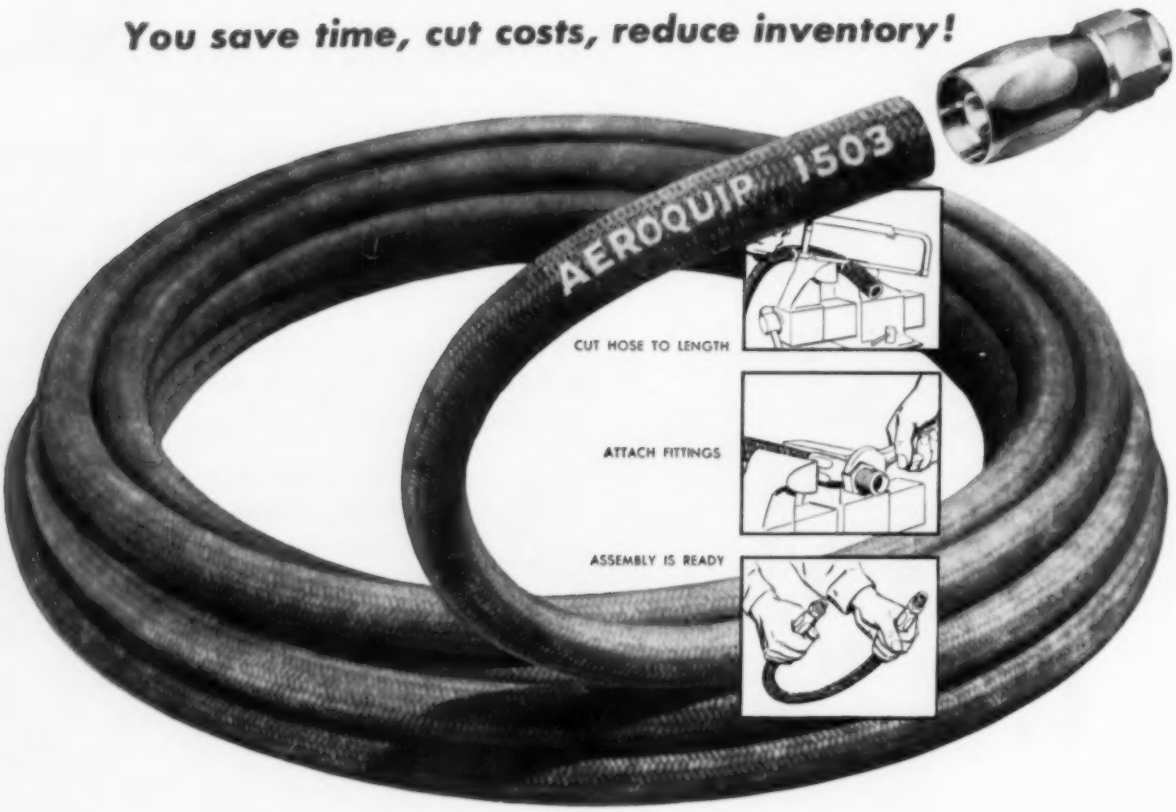
WEIRTON STEEL COMPANY
WEIRTON, WEST VIRGINIA

NATIONAL STEEL CORPORATION

Reduce Inventory

Why stock a big assortment of ready-made hose lines when a small supply of Aeroquip bulk hose and detachable, reusable fittings answers the purpose. With Aeroquip you make hose line replacements as they are needed.

You save time, cut costs, reduce inventory!



Aeroquip

REG. TRADE MARK

AEROQUIP CORPORATION, JACKSON, MICHIGAN

SALES OFFICES: Burbank, Calif. • Dayton, Ohio • Hagerstown, Md. • High Point, N. C. • Miami Springs, Fla. • Minneapolis, Minn. • Portland, Ore. • Van Wert, Ohio • Wichita, Kans.
IN CANADA: Preco Progress and Engineering Corporation Ltd., Toronto • **IN ENGLAND:** Super Oil Seals & Gaskets, Ltd., Birmingham

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

3 times the descaling capacity with only ½ the man power!

MADE POSSIBLE WITH THE MODERN

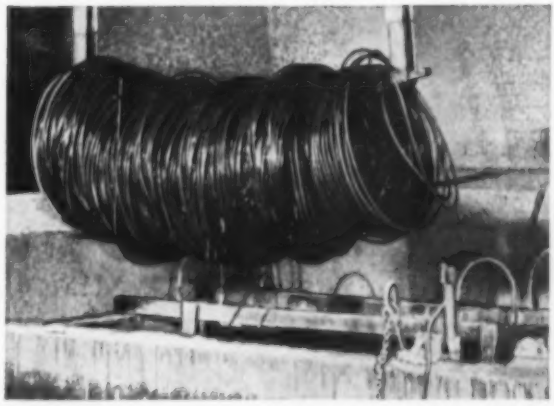
DU PONT SODIUM HYDRIDE DESCALING PROCESS

Descaling capacity up 300%—man-hours cut in half! That's the report from just one of the many steel mills that have replaced older descaling methods with the modern Du Pont Sodium Hydride Process.

Important savings and advantages like these are possible because of the high-speed effectiveness of the process. Just *one* fast treatment (10 to 20 minutes) is all it takes to completely descale most metals. Retreatments are rarely needed. Costly, scale-breaking operations used with older descaling methods are eliminated entirely!

With the modern Du Pont descaling process there's never any danger of etching or pitting—never a costly reject due to loss of gauge. Base metal is always protected since bath action stops the instant scale has been reduced. And the process is so easy to operate that any pickler can be trained to run it—within hours!

If you are descaling metals which are unaffected by fused caustic at 700°F., it will be to your advantage to talk with us about the Du Pont Sodium Hydride Process. Du Pont pioneered this modern descaling method and can bring a depth of technical experience to bear on your descaling problems. There's no cost for this service which includes expert aid in the construction, installation and operation of the process. Just call our nearest district office or send in the coupon below.

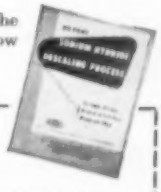


A YOKE of carbon steel wire is lifted from the hydride tank. Reduced scale is then blasted off with a water quench.

AFTER a high-pressure water rinse, the descaled wire is ready for brightening. Complete cycle takes less than 20 minutes.

DISTRICT AND SALES OFFICES: Baltimore • Boston • Charlotte • Chicago Cincinnati • Cleveland • Detroit • Kansas City* • Los Angeles • New York Philadelphia • Pittsburgh • San Francisco. *Barada & Page, Inc.

Check coupon below for booklet describing the Du Pont Sodium Hydride Descaling Process—how it works—what it can do for you.



E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department S-712
Wilmington 98, Delaware

☐ Please send me your booklet on Sodium Hydride Descaling.

☐ Please have one of your technical men call. I am interested in descaling _____.

Name _____ *Position* _____

Firm _____

Address _____

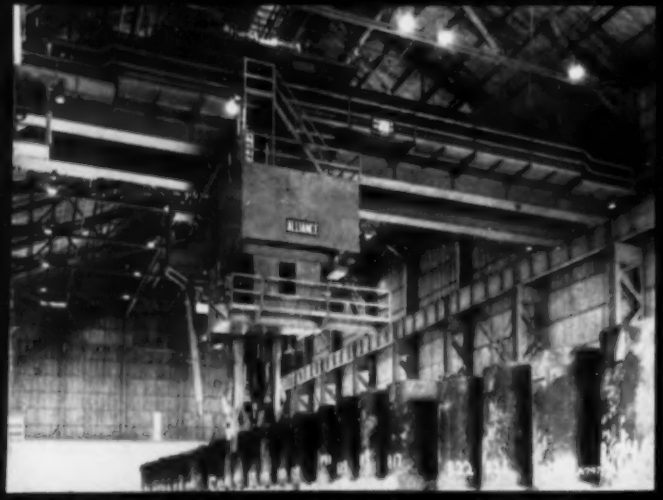
City _____ *State* _____

DU PONT
Sodium hydride process for positive descaling

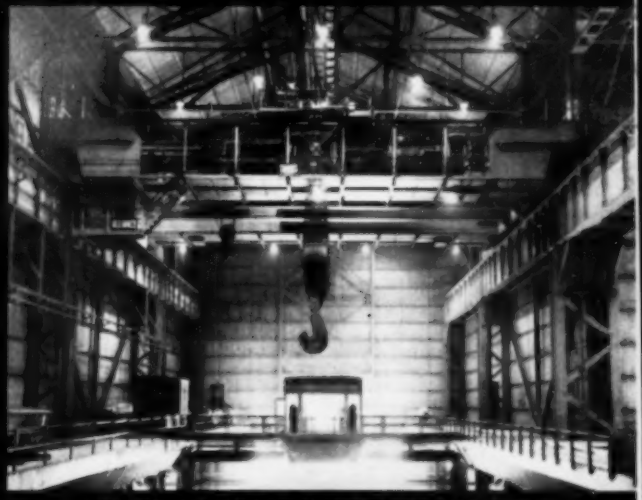
DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

450/75/20-ton 4-girder ladle crane with 69'-6" span. 2-motor, synchronized worm drive. Vibrationless under all operating conditions. Operator's cab air-conditioned.



400-ton capacity push-pull Stripper and Extractor Crane. 2.5-million-pounds pressure eliminates stickers. Overload rating of 1250 tons. One operator.



200/30-ton 4-girder double trolley hot metal ladle crane. 80' span.

BIG cranes for BIG steel

(FAIRLESS WORKS)

30-ton capacity, telescopic ram, low head room soaking pit crane. 106'-0" span. Tong range 12" min., 72" max.

The four cranes illustrated on these pages are the largest of their type in the world. They were created by teams of Alliance and U. S. Steel engineers for U. S. Steel's new Fairless Works.

Alliance cranes function in virtually every department in the mammoth Morrisville plant—day in and day out—safely, efficiently and economically . . . helping to establish new production records.

The techniques embodied in these giant cranes can be embodied in cranes designed for operation in your plant. When it's time to consider your crane requirements come to Alliance. We'll be glad to analyze your needs and work with you to effect the most efficient and economic solution of your problem.

"Give Us the Runway and We'll Lift the World"

THE *Alliance* MACHINE COMPANY

Main Office, Alliance, Ohio — *Founded 1901*

LADLE CRANES • GANTRY CRANES • SOAKING PIT CRANES • STRIPPER CRANES
FORGING MANIPULATORS • SLAB AND BILLET CHARGING MACHINES • OPEN HEARTH CHARGING MACHINES • SPECIAL MILL MACHINERY • STRUCTURAL FABRICATION

World's Largest Builders of the World's Largest Cranes

A AVAILABILITY
S SERVICE
Q QUALITY

AVAILABILITY of B&W CARBON STEEL SEAMLESS MECHANICAL TUBING

Gives you buying convenience

FORM IT
BEND IT
MACHINE IT
JOIN IT
EXPAND IT
SWAGE IT
1. You can specify hot-finished, cold-drawn or roto-rocked tubing.
2. You can select tube sizes in diameters up to 9⅝" OD in a complete range of wall thicknesses.
3. You can choose from regular carbon steels, free-machining steels such as C1117, C1126, C1137, or high manganese steels like C1019, C1022 and C1024.

remember A S Q *is meant for you*

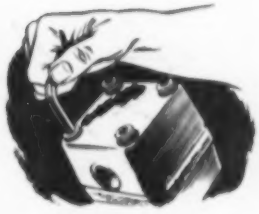
B&W SEAMLESS and WELDED TUBES

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

TA-4049 (CSM)

Four UNBRAKO Socket Head Cap Screws speed assembly in the plant, and reassembly in the field, of these flow-control valves providing 16 different inlet-outlet flow direction combinations.

The knurling on the head of the screw permits faster assembly, because it provides a slip-proof grip.



The uniform depth and size of the hex socket assure maximum torque in wrenching. The accurate diameter of the head permits countersinking.

UNBRAKOs—made of heat treated alloy steel—have fully formed threads, Class 3 fit; controlled fillet and continuous grain flow for strength. Supplied in standard sizes from #4 to 1".

Get personalized service, faster delivery with UNBRAKO Standards—stocked by your distributor

When you use UNBRAKO socket screw products, you get the finest socket screws made, *plus* the personalized service and the faster delivery of your local distributor. And he enables you to cut your inventory, set up more space for production. For more information, write for UNBRAKO Standards—a complete listing of precision socket screw products carried by your distributor. STANDARD PRESSED STEEL CO., Jenkintown 33, Pa.

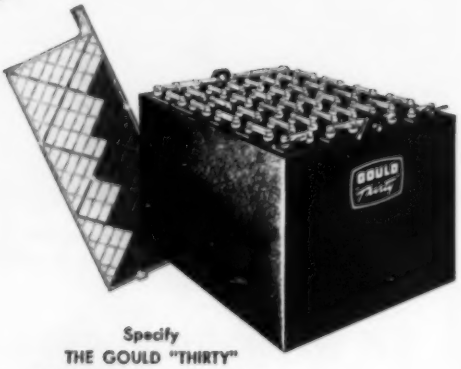
UNBRAKO® SOCKET SCREW DIVISION

SPS JENKINTOWN PENNSYLVANIA

Springs into Action . . .

THANKS TO BATTERY POWER!

Battery power is the most dependable industrial truck power available today. It is amazingly efficient because it springs into action instantly, transmitting energy to the wheels with a minimum of moving parts, a minimum of friction. That's why battery-powered trucks have in-service records that are unequalled. There's *no* power like battery power. There's *no* battery power like the Gould "Thirty" with new Diamond "Z" Grids.



Specify
THE GOULD "THIRTY"
with New Diamond "Z" Grids—
America's Finest
Industrial Truck Battery

Always Use Gould-National Automobile and Truck Batteries

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GOULD
BATTERIES
GOULD-NATIONAL BATTERIES, INC.
TRENTON 7, N. J.

For Railroad Air Conditioning and Lighting

For Mine Shuttle Cars and Locomotives

For Electric Industrial Trucks

For Diesel Locomotive Starting

For Standby and Emergency Power

Take your pick...

THEY'RE ALL JALTEN!

J&L's New JALTEN series enables you to select low-alloy, high-strength steel in the following combinations of advantages:

JALTEN No. 1 — High strength, good formability and fabricating—good resistance to low temperature impact.

JALTEN No. 2 — High strength, moderate forming—improved resistance to atmospheric corrosion.

JALTEN No. 3 — High strength—improved resistance to abrasion.

Remember to specify JALTEN High Tensile Steel for

- **HIGH STRENGTH • RESISTANCE TO CORROSION**
- **GOOD FORMABILITY • RESISTANCE TO ABRASION**

J&L STEEL

Jones & Laughlin
STEEL CORPORATION – *Pittsburgh*

The data you want is in this book:

- Chemical Properties of Jalten
- Mechanical Properties of Jalten
- Jalten Equivalents
- Jalten Application Data

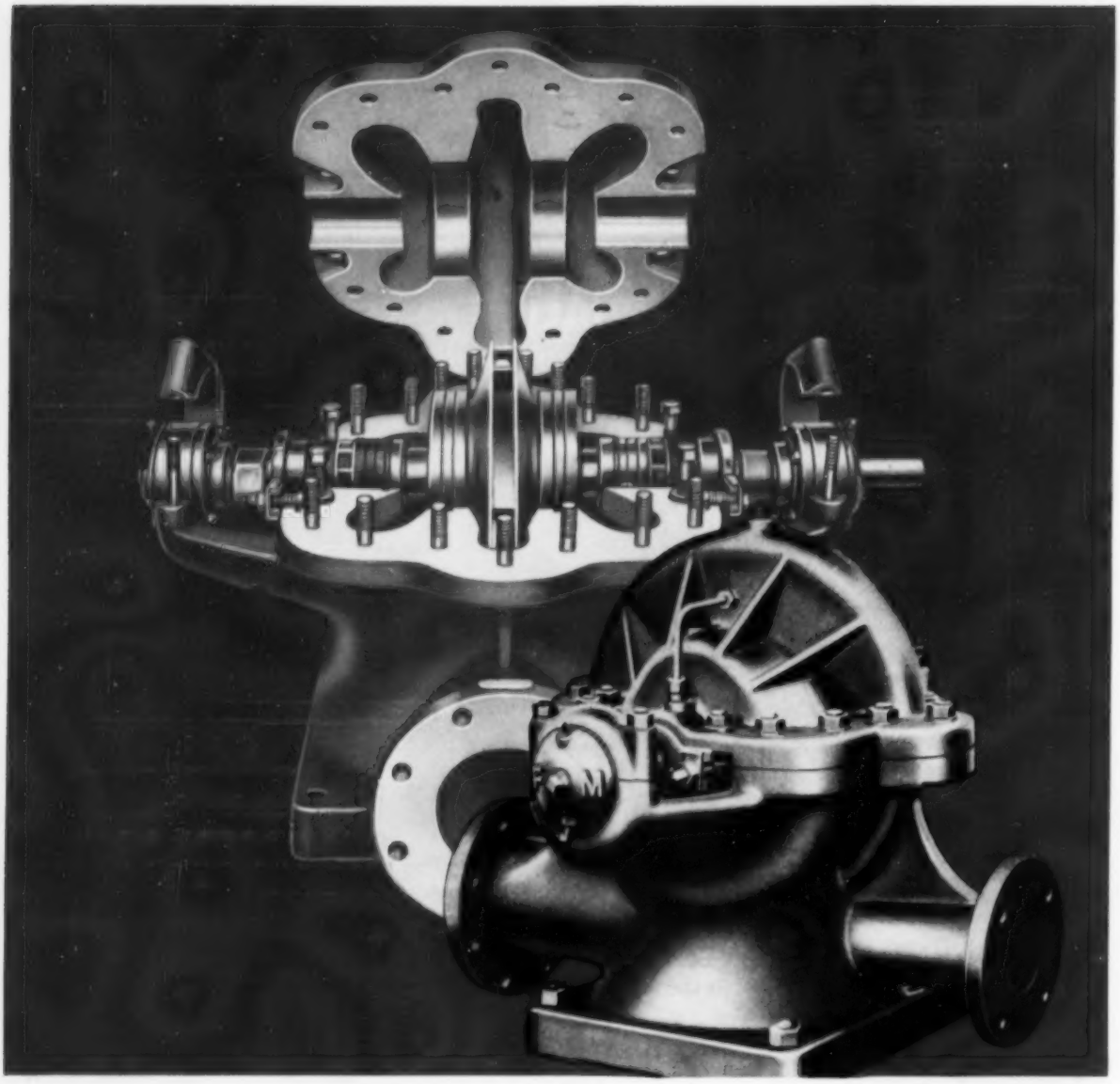
Jones & Laughlin Steel Corporation
Dept. 404, 3 Gateway Center, Pittsburgh 30, Pa.

Please forward a copy of your booklet, Jalten low-alloy, high-strength steel.

Name _____

Company _____

Address _____



out of the mouth of a pump...

Suppose a pump could "spill its works" . . . tell you how it was made . . . speak of the design, material, workmanship that went into its being . . . then you could know . . . and buy with confidence.

Because after all, pumps do look very much alike. How, then, to tell which make is best for you. *Reputation* is one way, *performance* another.

And, on both counts, Fairbanks-Morse pumps stand out. Don't take our word for it. Check with Fairbanks-Morse users. We'll stand by their verdict. For Fairbanks-Morse has only one standard . . . *quality* . . . the quality that means dependability, service, low maintenance, all those important points that you want in the pumps you buy.

To get these advantages in your pumps, rely on the world's largest manufacturer of a complete pump line. See your nearest Fairbanks-Morse Branch, pump dealer, or write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

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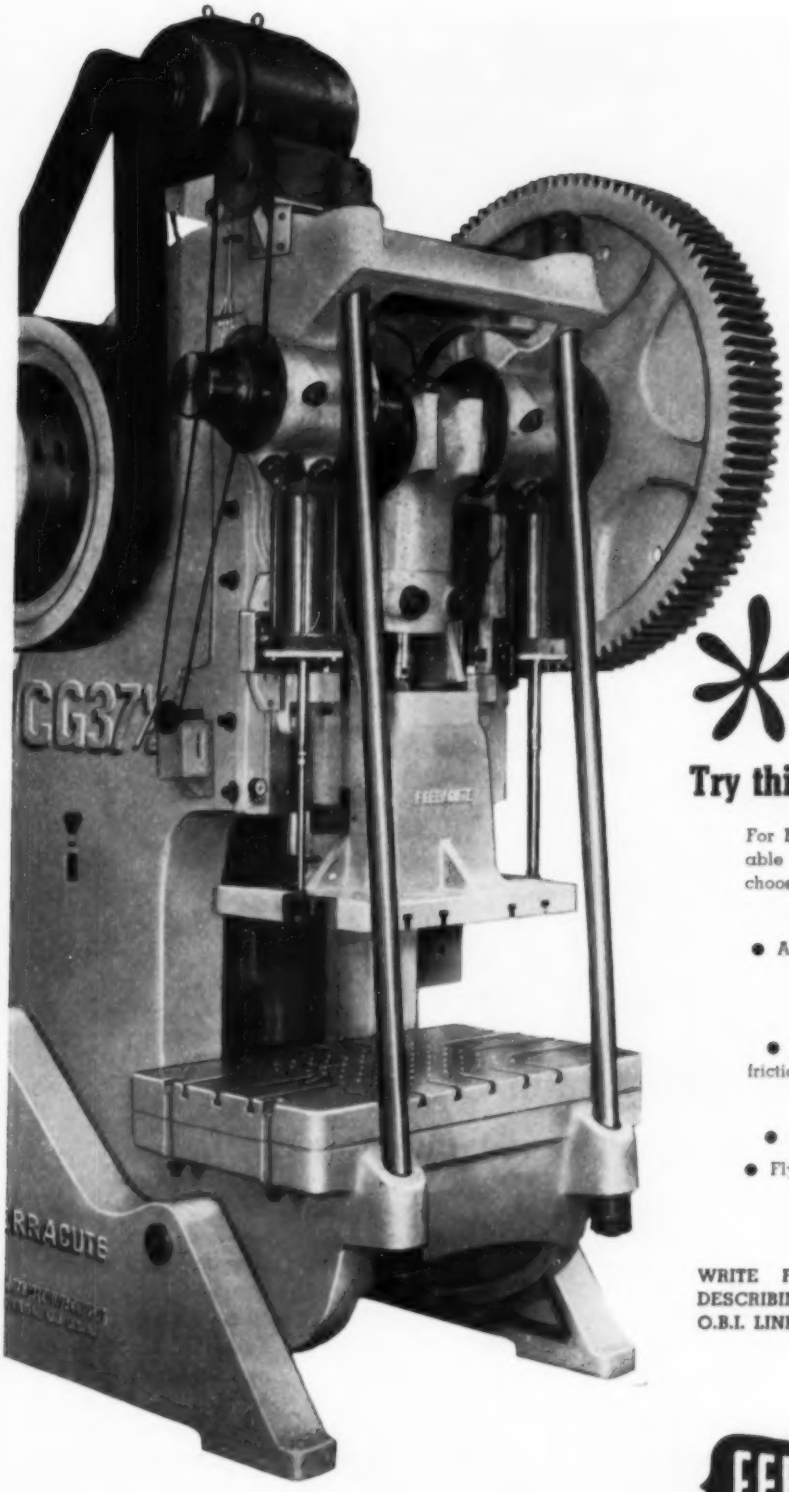
a name worth remembering when you want the best

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • RAIL CARS • HOME WATER SERVICE EQUIPMENT • FARM MACHINERY • MAGNETOS



Need an Inclinable?

Try this one for SIZE . . . .

For BIG PRESS advantages plus Inclinable speed, convenience and economy, choose FERRACUTE CG-37½:

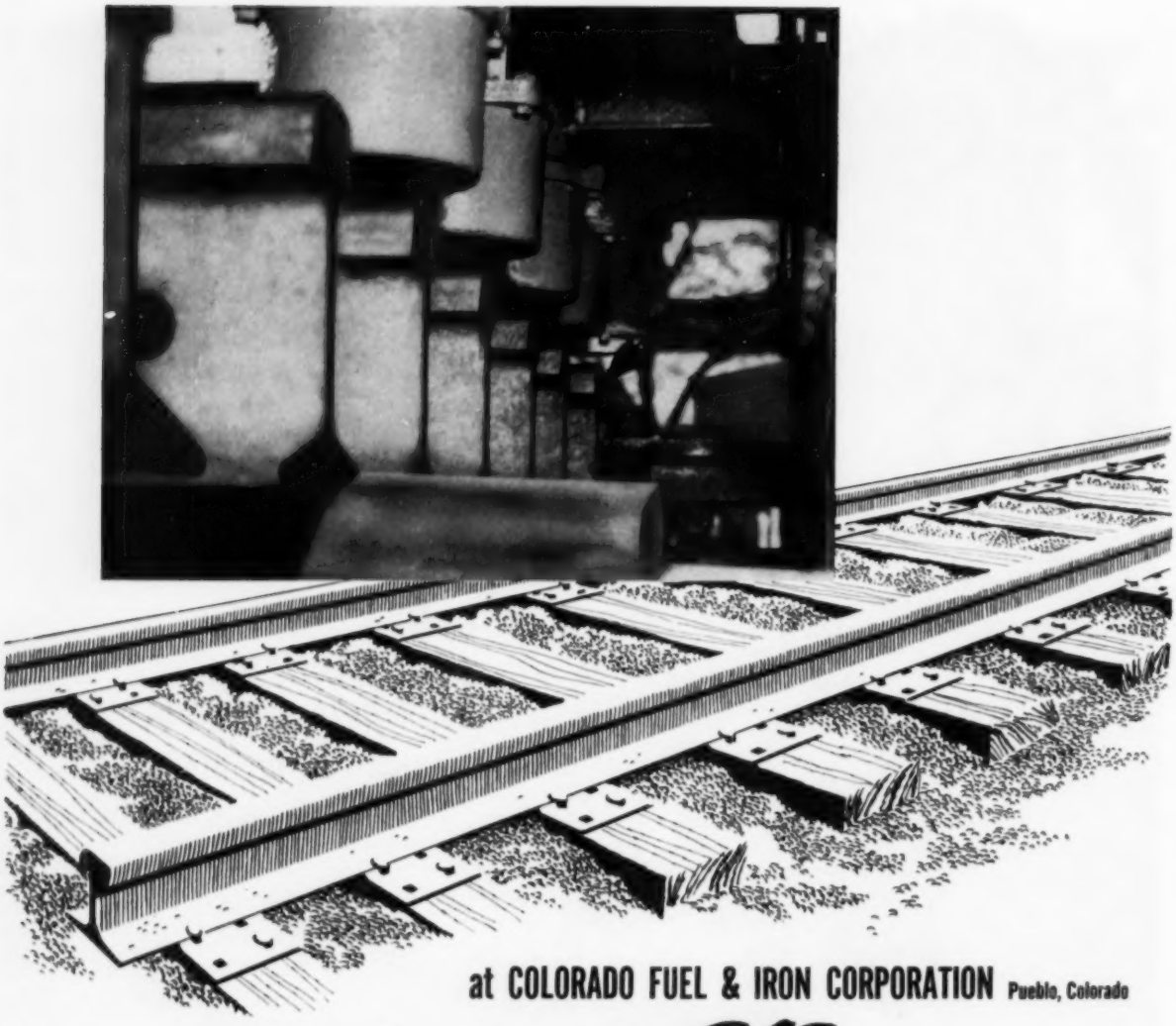
- 200 tons rated capacity
- Area of bed F to B X R to L 34" x 58"
- Stroke, maximum of 13"
- Cast steel frame
- Air-operated, electrically-controlled friction clutch with interconnected brake
- Automatic lubrication
- Bronze bushed journals and pitman
- Flywheel and back shaft mounted on roller bearings

WRITE FOR NEW FOLDER DESCRIBING COMPLETE O.B.I. LINE. 32 to 200 TONS

FERRACUTE

FERRACUTE MACHINE COMPANY

Since 1863. manufacturer of Power Presses and Special Machinery • BRIDGETON, N. J., U. S. A.



at COLORADO FUEL & IRON CORPORATION Pueblo, Colorado

high speed processing with GAS produces longer lasting rails

The essential role of GAS as a production-line tool is particularly well demonstrated in the manufacture of railroad rails at Colorado Fuel and Iron Corporation, Pueblo, Colorado.

This process involves the use of GAS-fired radiant burners, with automatic cycle-timing devices, to harden the ends of the finished rails as they move out of the mill.

First the rails are pre-heated by GAS to 1000° F. Then the ends are heated by high intensity GAS radiants which automatically bring the temperature to 1600° in 95 seconds. Finally, a cold air blast quenches and hardens the ends. This hardened area covers the entire rail width to a minimum depth of ¼" and extends back from the end about 1½".

High-speed heat processing with GAS results in longer rail life, lower maintenance costs, and greater safety for the railroads. The installation is one of thousands of *precision-tool* applications of GAS for exacting metallurgical requirements. If you would like further information on how GAS and Modern Gas Equipment increase efficiency, reduce costs, and improve products throughout industry, call your Gas Company Representative.

AMERICAN GAS ASSOCIATION
420 LEXINGTON AVENUE, NEW YORK 17, NEW YORK

THE MODERN METHOD OF INCREASING SIZE OF BUNDLE

VAUGHN®

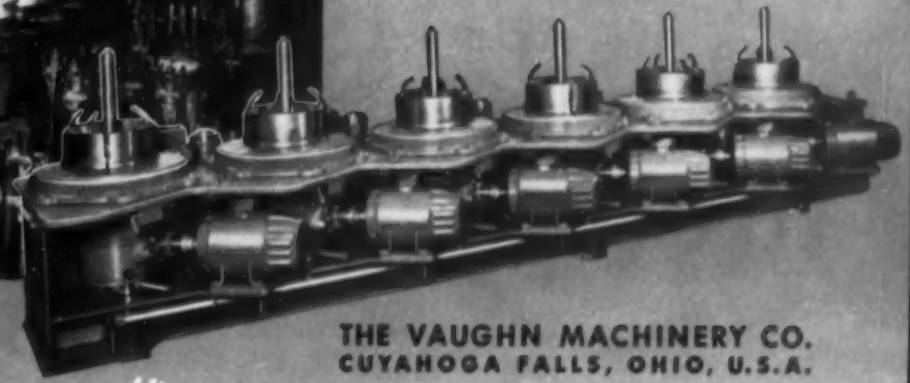
TAKE-UP UNITS

FOR PATENTING AND GALVANIZING

Note these Features!

1. **Individual motor drive—with slow down feature for stripping.**
2. **Push up blocks.**
3. **High riding stripping spider provides a pay-off stand for subsequent processing, and**
4. **automatically reduces pay-off tangles and handling costs.**
5. **Heavier weight bundles mean decreased labor cost.**

Let us discuss these Vaughn advantages with you!



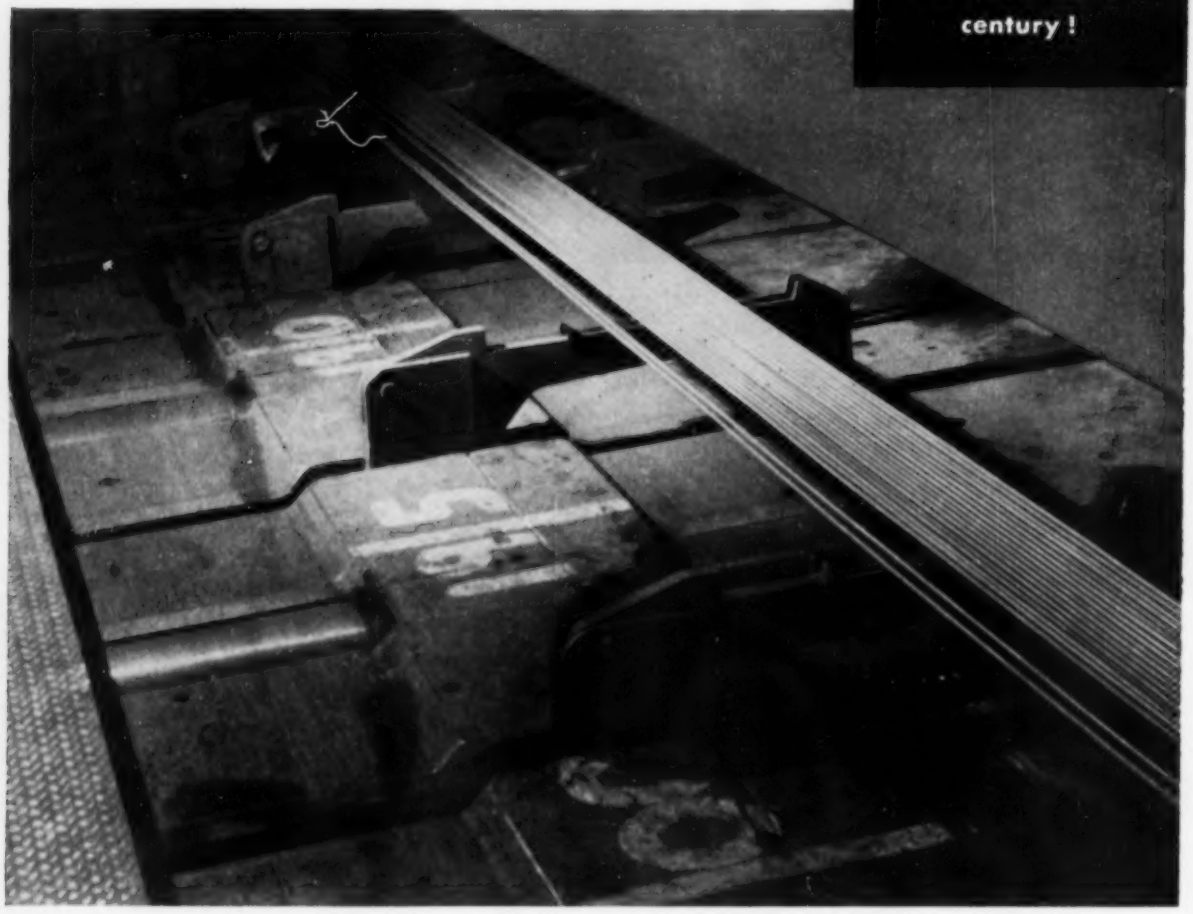
"Quick on the Draw!"

THE VAUGHN MACHINERY CO.
CUYAHOGA FALLS, OHIO, U.S.A.

COMPLETE COLD DRAWING EQUIPMENT—Continuous or Single Hole . . . for the Largest Bars & Tubes . . . for the Smallest Wire . . . Ferrous, Non-Ferrous Materials or their Alloys.

for more automatic transfer and handling . . . look to BIRDSBORO

Designers and Builders of Better Steel Mill Machinery for over half a century !



Designers and Builders of:
STEEL MILL MACHINERY
HYDRAULIC PRESSES
CRUSHING MACHINERY
SPECIAL MACHINERY
STEEL CASTINGS
Weldments "CAST-WELD" Design
ROLLS: Steel, Alloy Iron, Alloy Steel

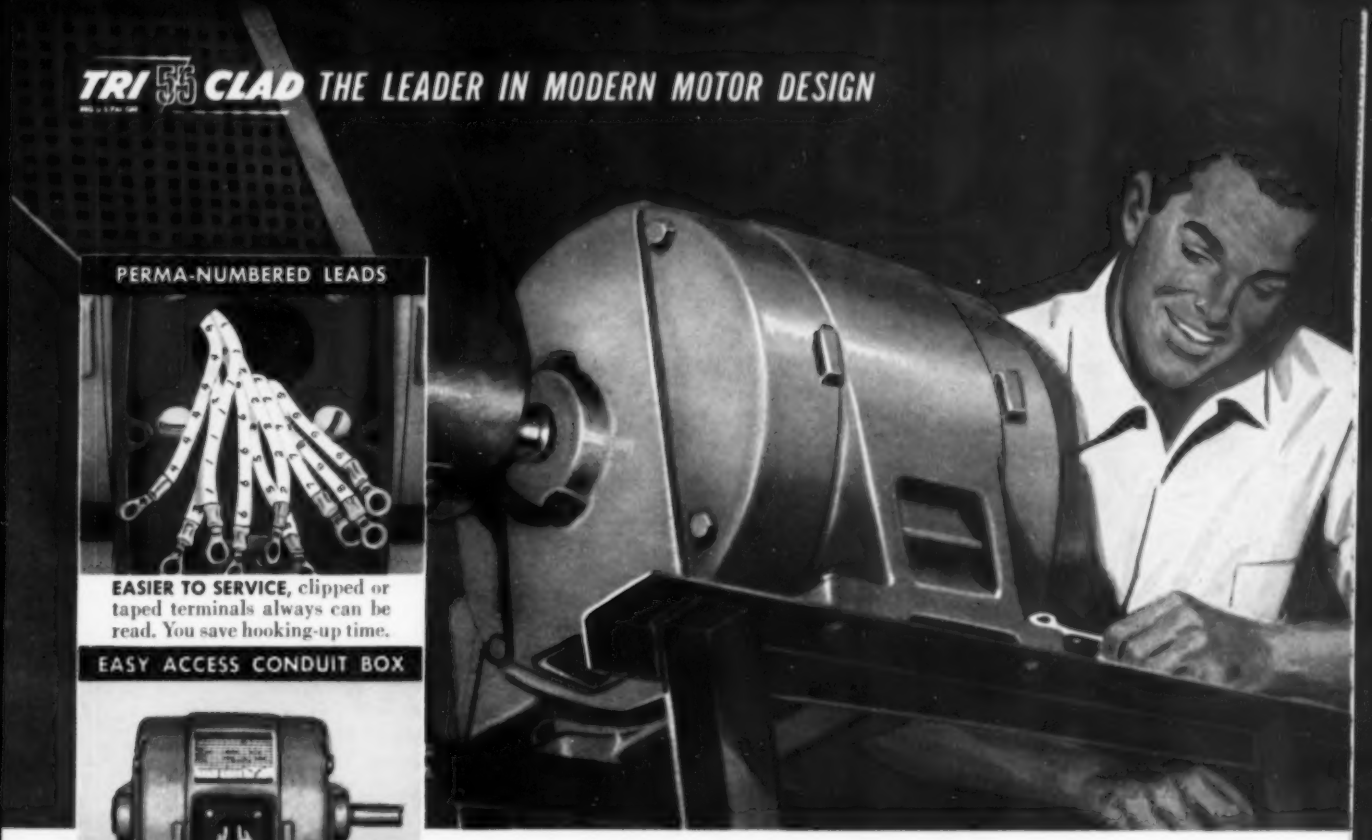
• Birdsboro-built Cooling Bed Shear Approach Table Transfer, showing shuffle bars, double shear approach table and transfer that feeds double cold bar shear simultaneously. Transfer passes lift of bars from shuffle bars to second table without interfering with bars on first table.

MM-34-54

BIRDSBORO

BIRDSBORO STEEL FOUNDRY & MACHINE CO., BIRDSBORO, PENNA. Offices in Birdsboro, Pa. and Pittsburgh, Pa.

TRI 55 CLAD THE LEADER IN MODERN MOTOR DESIGN



PERMA-NUMBERED LEADS

EASIER TO SERVICE, clipped or taped terminals always can be read. You save hooking-up time.

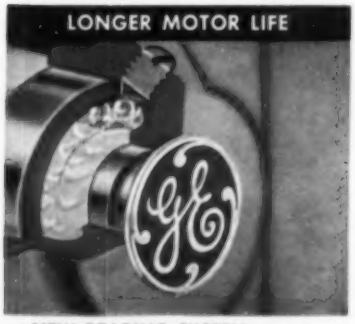
EASY ACCESS CONDUIT BOX

LARGE CONDUIT BOX is diagonally split—gives you ample knuckle room for easier wiring.

60% MORE PROTECTION

MORE FULLY PROTECTED motor achieved through redesign of cast iron frame and end shields.

LONGER MOTOR LIFE



NEW BEARING SYSTEM means the G-E motor runs longer without relubrication than any other.

Now, easier installation, less maintenance . . .

G.E.'s new TRI 55 CLAD motor—you can install it and forget it!

REG. U.S. PAT. OFF.

The all-new General Electric Tri/Clad '55' motor is specially engineered to reduce your installation costs . . . and run longer, without attention, than ordinary motors. This new motor gives you 60% more physical protection plus longer electrical life. In addition, a bearing system designed to use the most modern greases means you will not have to regrease the Tri/Clad '55' for years.

You save with the new Tri/Clad '55' because wiring is easier and faster. The large, diagonally split conduit box gives you plenty of knuckle room. Leads are perma-numbered . . . you can always identify them instantly.

The new Tri/Clad '55' also brings you important handling, storing and installing economies. Better use of space within the frame means a 30% reduction in size and weight in some ratings. Yet active materials (magnetic steel and copper) are not sacrificed.

General Electric Tri/Clad '55' motors are now available in many ratings. The complete line of 1 to 30 hp a-c motors will be available soon. For full details contact your G-E Apparatus Sales Office or G-E Motor Supplier today. Write for Tri/Clad '55' bulletins GEA-6013—Dripproof motors, GEA-6012—Enclosed motors, GEA-6027—Gear-motors. General Electric Company, Section 648-7, Schenectady 5, N. Y.

Progress is our most important product

GENERAL ELECTRIC

TO HELP REDUCE YOUR ROLLING COSTS

HERE ARE TWO PRODUCTS

to keep your rolls and gear trains running so efficiently you are assured of increased production and lower unit costs.

Texaco Regal Oil – the heavy circulating oil especially designed to protect the oil film bearings of your roll necks under the severest conditions.

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STEEL
July 12, 1954

Metalworking Outlook

Construction: Up and Up

Construction, the economic surprise of 1954, continues up and up. First-half expenditures hit a record $16.6 billion. The second half traditionally is better than the first, so a $36-billion volume for the year is possible. During the first six months, private spending for new construction totaled $11.4 billion, about 3 per cent above last year's first half. Public spending for new construction under way in the first six months totaled $5.2 billion, about the same as in the corresponding 1953 period.

Hard Goods Inventories Slide

The shakeout in manufacturers' inventories keeps on. Seasonally adjusted durable stocks hit $24.9 billion at the end of May, compared to $25.3 billion in April and $25.9 billion in March. Total manufacturing and trade inventories at the end of May were an estimated $79.6 billion, down $100 million from April. The only drop was in manufacturers' durables. Manufacturers' nondurables and all retail and wholesale stocks climbed. Look for further declines in hard goods for the rest of the summer, but a pickup should come by September.

More Power for Power

Watch for the continuing expansion of the electric power industry. The Federal Power Commission forecasts that the peak load of the larger electric utilities in the U.S. will increase from 80 million kilowatts in 1952 to nearly 250 million kilowatts in 1975.

Doubled Maintenance

In the next ten years industry will double its maintenance expenditures to about $22 billion annually. That's the prediction of H. F. McCullough, general manager of General Electric Co.'s Service Shops Department. He says industry must direct to maintenance functions the same degree of management skill now devoted to production. He wants better training of maintenance men to meet the problem caused by more complex machinery and greater production. For better maintenance, gather complete equipment data, evaluate routine maintenance to show how much care is warranted, establish a routine operating control system, determine the critical maintenance needed and establish a critical maintenance program.

Mergers in Coal?

Watch for a rash of mergers among coal mining firms. Some 5000 of them now compete for business which has been hard hit by inroads of natural gas and oil. With the exception of a few firms like Pittsburgh Consolidation Coal Co. and Peabody Coal Co., most producers are small—too small to operate economically under today's conditions, some experts believe. One important merger, Sinclair Coal Co. and Truax-Traer Coal Co., is already being negotiated. Since 1947 when soft coal production reached

a record 630 million tons, output has slipped steadily. Last year it was only 450 million tons, and a further drop is likely in 1954.

SBA To Speed Loans

To speed up its loan program, the Small Business Administration has authorized 14 regional directors to make many loans up to $50,000 without prior approval of the Washington office. To date, SBA has completed action on 1459 loan applications. Of these, 462 have been approved, 728 declined and 269 withdrawn by the applicants. Loans authorized have totaled $8.6 million.

Tinless Cans Coming

Tinless cans of the future may come from untinned steel, specially treated steel, aluminum and steel coated with aluminum, zinc and possibly nickel. Dr. R. H. Lueck, American Can Co.'s general manager of research, predicts that for the foreseeable future most of the tin-free metal cans will be manufactured from steel or steel coated with other metals. No other metal is produced in sufficient quantity to meet the needs of 35.6 billion metal cans produced annually. Aluminum cans are already used in Europe, but Canco researchers are experimenting with an aluminum coating on steel as more practical than an all-aluminum container for American uses.

Salaries Level Off

Average starting salaries of engineering graduates are leveling off after spiraling for more than a decade. Students who received Illinois Institute of Technology bachelor degrees in June are earning an average salary of $363 a month, only $1 more than the June, 1953, class. The average beginning salary for the January, 1954, class was $373.

Straws in the Wind

Ralph E. Cross, on leave from Cross Co., Detroit, is the new assistant administrator, Business & Defense Services Administration . . . There may be mergers of the mergers in the auto industry; some observers think American Motors Corp. may hook up with one of the other merged firms . . . The U.S. may offer more defense contracts to American watch and clock makers in lieu of their request for more tariff protection . . . Work stoppages, workers involved and total man-days of idleness increased between April and May: 1,750,000 man-days of idleness in May compared to 1.2 million in April.

This Week in Metalworking

Most consumers will absorb all or much of the $3 steel price increase (p. 67) . . . Roller bearing makers see an upturn ahead (p. 69) . . . Railroad equipment suppliers are organizing a committee to help keep the railroads from being taxed, regulated and organized to death (p. 70) . . . Railroads have more cards up their sleeves to get more metalworking business (p. 71) . . . The U.S. is moving to withdraw still more from operations which compete with commercial enterprises (p. 72) . . . It must be the heat as industry develops equipment to utilize the sun's rays (p. 73).

"I was promised delivery today,

but now I'm told you've no stock of one rope and only half enough of another. This delay is costing me money and plenty of it. From now on it's Roebling for me!"

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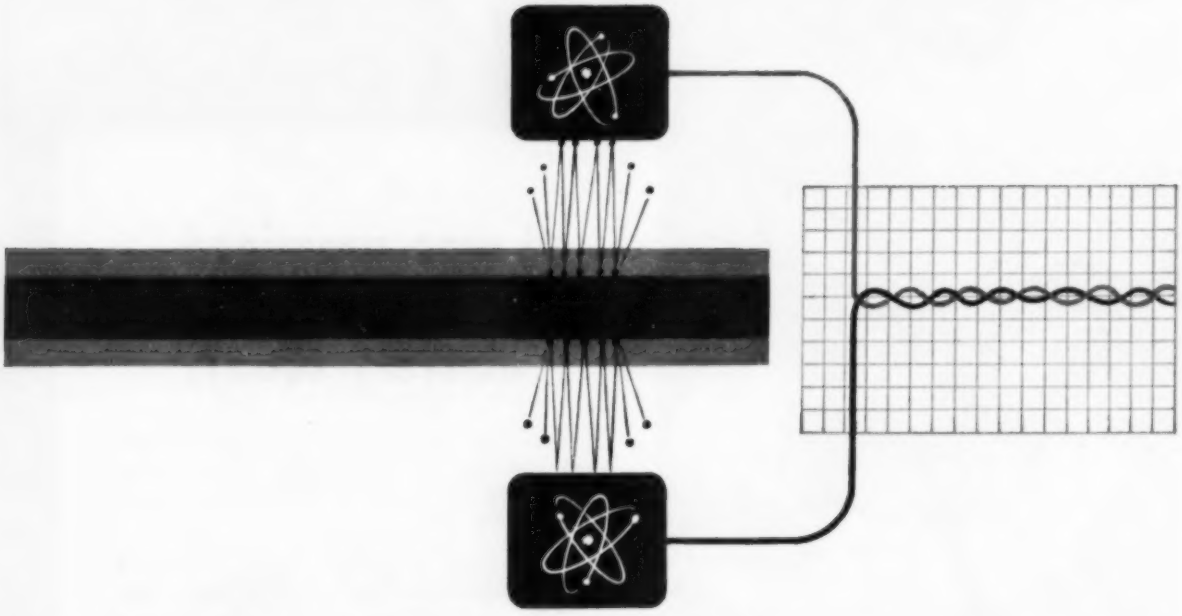
NOW ARMCO MEASURES ZINC COATINGS WITH ATOMIC RADIATION



Here for the first time is an atomic radiation gage for determining the weight and distribution of zinc and other metallic coatings on sheet steel. The device employs radioactive materials and makes measurements by electron bombardment. It then passes its findings in record form along to the machine control station.

A glance at the recording chart tells the operator of the continuous strip coating machine exactly how much zinc is being applied — from edge to edge. Any irregularity can be spotted immediately and corrected by machine adjustment.

The new gage assures closer quality control of coatings on steel. This means less variation from specified coating weight, no heavy and light areas.

Sheets with controlled coatings will help make better products and build greater customer-satisfaction. Armco technologists have been instrumental in the development of this gage, another contribution to improved steelmaking practice.

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Suppliers Take Initiative

An organization known as the Committee of Railroad Suppliers is launching a campaign to promote public understanding of the achievements and importance of American railroads. The line of reasoning behind this movement was stated clearly by Benjamin F. Fairless, chairman of U. S. Steel, at a meeting of the committee at Hotel Plaza in New York on June 30.

Suppliers are concerned because the roads are unable to buy equipment, supplies and services which they sorely need but cannot afford. In the case of steel, Mr. Fairless pointed out that in 1954 the roads will order only 4 million tons of finished steel, whereas they actually need and would like to order 5½ million tons. Because these 1½ million tons will not be produced, 13,000 steelworkers will be without jobs.

Headaches of the steel people are matched by those of other suppliers. In the first quarter, purchases of coal by Class I roads were down 35 per cent from purchases in the first quarter last year. Likewise, purchases of fuel oil were down 11 per cent, new orders for freight cars dropped 59 per cent and for locomotives 54 per cent.

Why can't the railroads do what they want to do? According to Mr. Fairless, they are stymied because they are "taxed to death, bargained to death and regulated to death." In some eastern states railroads pay more taxes than they earn in those states. Feather-bedding is a terrific burden. Interstate Commerce Commission regulations are 100 years behind the times.

The campaign by the Committee of Railroad Suppliers may be more convincing to the American public than the direct public relations activities of the railroads themselves. If this proves to be true, then metalworking executives will do well to determine to what extent they would be justified in going to the assistance of any troubled industry to which they are important suppliers.

For instance, the American coal and shipbuilding industries are in distress. Would it be wise for the major suppliers to these industries to campaign for a better public understanding of the problem of coal mining and shipbuilding? This question merits careful consideration.

E. L. Shaner

EDITOR-IN-CHIEF

WHERE TO BUY STEEL: Section two of this issue, which is bound separately for your convenience, is a guide for steel buyers. By referring to its detailed listings, buyers can determine readily which mills make the many finished forms of carbon, silicon, alloy and high-

strength low-alloy steels. For many products, the listings are classified into commercial sizes.

A study of this guide will be revealing even to those who think they know the steel producing industry intimately. Many of us think of this industry in terms of its larger units. In reality it is an industry of a few large units and many small units. On pages 37 and 38 are listed no less than 188 producers. It will be educational for readers to scan this list and to note the number of smaller companies which through specialization round out the service of the entire industry.

What you are looking at in STEEL's "Guide for Steel Buyers" is a catalog of the world's greatest source of finished steel products. From its listings you have a wide range of choice—far beyond anything offered to steel buyers in any other market in the world.

* * *

STEEL COSTS $3 MORE: That $3 per ton average increase which steelmakers have announced in the price of steel (p. 67) means that the cost of steel goes up about $5.30 in a 4-door automobile, $11.50 in a 6-room house, 30 cents in a refrigerator, $2.30 in a farm tractor and $62.60 in a 50-ton box car. To what extent the manufacturers of these and other products will pass on the added costs to their customers will depend upon competitive conditions and many other factors. The proportion absorbed will vary greatly. Since the end of World War II, steel wages have increased 101.3 per cent; steel prices have advanced 84.4 per cent.

* * *

WATER NEED SERIOUS: Although we still are at the beginning of summer, reports of water shortages are rampant in many parts of the country. It is becoming increasingly evident that the planners not only have seriously underestimated population growth but they also have failed to take into account the sharply increased consumption of water per capita.

This predicament tends to lend importance to the present efforts to improve methods of converting salt water into fresh water. Some authorities are optimistic enough to hope that new processes (p. 74) may bring the cost down to something between 30 to 80 cents per 1000 gallons. This compares with pumped irrigation water at 13 cents and some municipality water at about 30 cents per 1000 gallons. Also of timely importance is a new spurt in research activity to convert brackish and mineralized ground and surface water in inland locations into usable fresh water.

Anything that can be done to relieve the growing acute water situation should have high priority.

* * *

FOR CHEAPER TITANIUM: Titanium is going to be such an important factor in our technological advancement in the near future that frequent progress reports are welcomed by all who are working on this glamorous material. Looking back to the predictions of the pioneers who were experimenting with the metal five or more years ago, we must admit progress has been faster than anticipated.

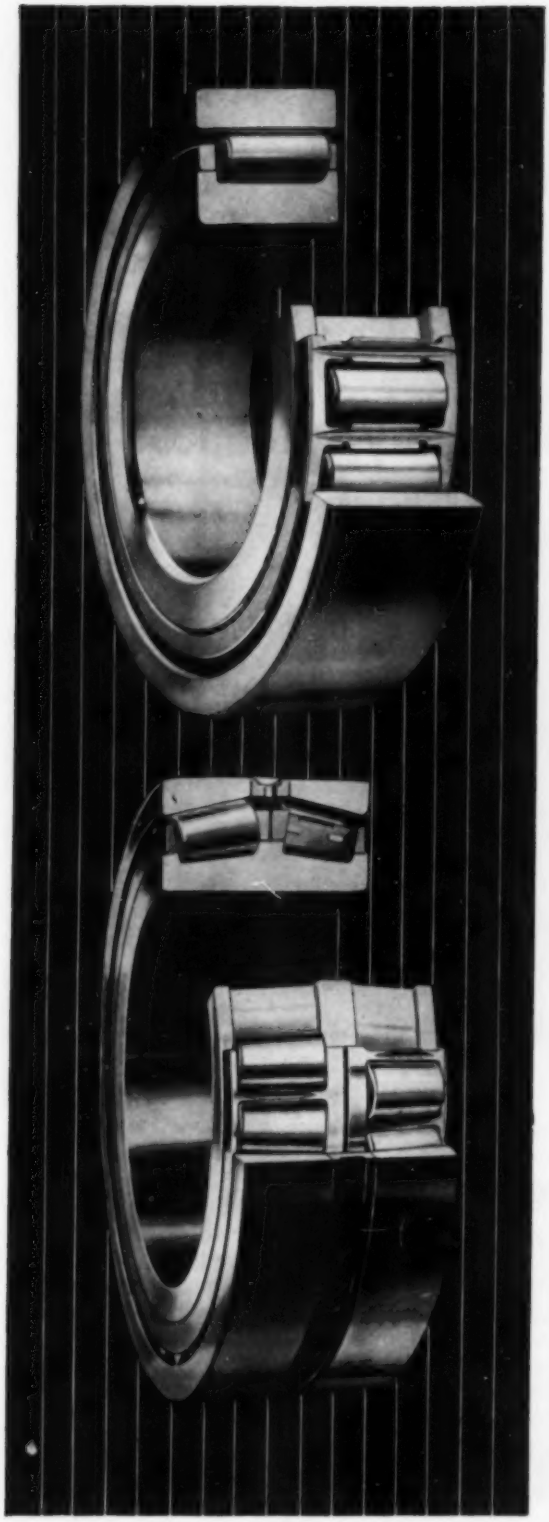
Nevertheless, those actively engaged in the development of titanium are not satisfied. Nor will they be satisfied (p. 126) until prices are whittled down to a realistic level. Some experts are hoping to do this by means of refinements in the expensive Kroll thermal process. Others—perhaps a majority—think that the ultimate solution will come from the development of an electrolytic process.

It's almost certain that the tremendous technical assault upon the titanium problem will be productive.

* * *

NO GAIN IN 41 YEARS: On a world trip some years ago this writer was impressed by the trait of many Orientals to act as if a projected plant or addition were a reality. Time and time again, Japanese and Chinese blueprints which presumably were of actual installations, proved to be blueprints of which a third or fourth of the facilities had been built and the remaining two-thirds or three-quarters were merely "contemplated."

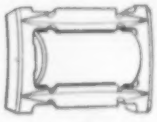
This comes to mind as we read in *Barron's* of June 28 in an article by Paul Wohl that Soviet statistics show that the highly propagandized mechanized agriculture of Russia today actually is inferior to the peasant agricultural output under the czars. The touted mechanized output of grain in 1952 was 500 kilograms per capita. In 1913 with primitive hoes and hand plows the czar's peasants produced 673 kilograms of grain per capita.



Here's how TORRINGTON Cylindrical and Tapered Roller Bearings ...Cut your costs, increase efficiency

Finest bearing-quality steels purchased to our specifications, plus modern heat-treating methods, insure highest load-carrying capacity, long life, and resistance to wear.

Precision tolerances and finishes on both rollers and races assure low eccentricity and uniform load distribution, cut friction to a minimum.



Individual roller retainment keeps rollers well lubricated, simplifies inspection of race surfaces.

Stabilized races maintain accuracy of fit under severest operating conditions.

One-piece cast-bronze cages help minimize wear, lengthen bearing life.

Rollers accurately guided at the pitchline—by contacting machined pads on each pocket face.

Custom engineered to meet your load and speed requirements, TORRINGTON Cylindrical and Tapered Roller Bearings increase operating efficiency in the toughest heavy-duty applications. Interchangeable in all types and sizes.
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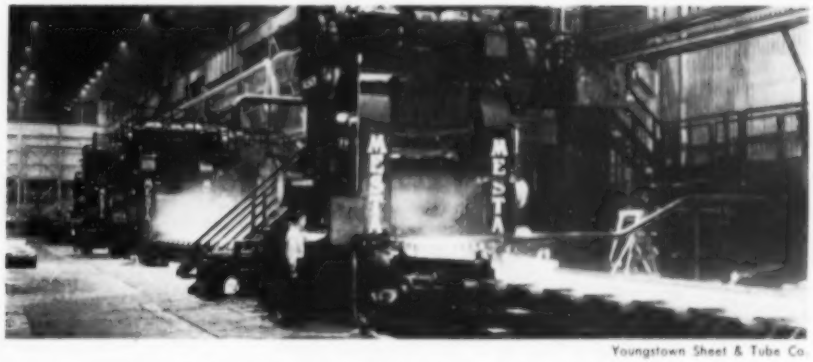
Since 1945 . . .

Steel Wages Jump
101.3 per cent

Jones & Laughlin Steel Corp.

(Minimum hourly rate from December, 1945, to July, 1954)

Steel Prices Climb
84.4 per cent



Youngstown Sheet & Tube Co.

(Hot-rolled sheet per net ton, Pittsburgh, from December, 1945, to July, 1954)

Most Consumers Will Absorb $3 Steel Price Increase

STEEL USERS will absorb all or most of the latest steel price increase.

"Conditions are too competitive for us to do anything else," says an auto parts maker. Comments an appliance manufacturer: "I know the 10-to-12-cent wage settlement is costing the producers at least $4 a ton, so I guess the average $3 increase is not out of line."

Calm—That was the kind of weary resignation that greeted the price increases which came July 3, hard on the heels of the wage settlement. U. S. Steel Corp. was the first to come out with its price announcements, but last week all the other major producers were bringing out their new quotations, too. The average boost is $3 a ton, up 2.5 per cent. A year ago after an 8.5-cent settlement, the steel industry boosted prices an average $4 a ton.

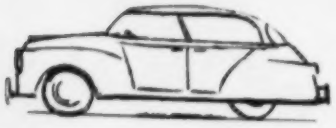
The increases vary widely from $2 a ton on rerolling slabs to $6 on some alloy and wire products (for details, see STEEL's market section, beginning on p. 169). The average price of carbon is still only a shade more than 6 cents a pound. The price gains come now despite the sub-70-per-cent ingot operating rate because of the steel industry's profit situation. U. S. Steel, for example, had earnings of only 5.8 cents on its sales dollar in 1953, a record production year. In the first quarter of 1954, earnings dropped still lower, to 5.4 cents per sales dollar.

Comparison—Steel prices have climbed far less than steel wages since World War II ended in 1945 (see above). And the wage percentage excludes fringes. They were low in 1945, but American Iron & Steel Institute figures pensions, social security and insurance cost steel companies about 18 cents an hour today. That will rise to 23 to 25 cents an hour by next Nov. 1 when the 5-to-7 cents higher costs of pensions and insurance go into effect.

The steel minimum wage rate in 1945 was 78 cents an hour. It's $1.57 now. Hot-rolled sheets, per net ton in Pittsburgh, cost $43.92 in 1945. U. S. Steel's price is $81 today.

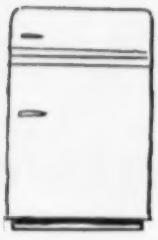
Exception—A STEEL survey reveals that a few manufacturers, mostly capital equipment makers, will pass along the price increase:

The $3-per-ton average price increase means the cost of steel goes up . . .



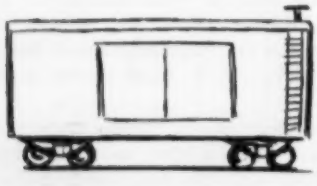
$5.30 in a four-door automobile

$11.50 in a six-room house



30 cents in a refrigerator

$2.30 in a farm tractor



$62.60 in a 50-ton box car

"We use a lot of steel in our product," says an Ohio machine tool builder, "and much of it is alloy which has been raised, I'd guess, about $5 a ton. We'll have to pass that along, but the increase will still be a small proportion of our total price."

Most steelmakers don't believe the price increase will affect demand one iota. One West Coast auto parts producer, who uses both aluminum and steel, says: "The boost in steel averages only 0.15 cents a pound, not enough for us even to consider changing to aluminum on any of our products. If we do make any shifts away from steel, it will be for reasons other than price."

Explanation—"We're able to absorb this steel increase because the end of excess profits taxes and the decline in overtime make our earnings pretty good," says a manufacturer of construction machinery. "But what worries us is: Can we absorb higher wages if our union demands them? Its proposals have often paralleled these of the steelworkers. Frankly, I don't think we can absorb if we have to grant higher pay."

Steel Firms Sign Agreement

Arrangements have been concluded between Allegheny Ludlum Steel Corp., Pittsburgh, and Mannesmann-Huettenwerke A. G., a leading steel company in West Germany, for exchange of technical information about manufacture of grain oriented silicon strip steel.

Under terms of the agreement, the German company is receiving information of techniques of manufacturing the material in possession of Allegheny Ludlum. In return, the German firm has made a cash down-payment and agrees to pay a royalty on all material it produces over a period of about ten years. It will give Allegheny Ludlum free rights to any improvements which it may make in the material or its manufacture during life of the agreement.

Titanium Process To Be Tested

Horizons Titanium Corp., Princeton, N. J., will erect and operate for one year a pilot plant to study the company's "Process A" method of making ductile titanium metal. A contract with General Services Administration specifies that the government will pay Horizons a maximum of $564,000 for the studies, tentatively set for Stamford, Conn.

According to Edmund F. Mansure, administrator of General Services, if the tests are successful and Horizons later uses the method either to produce the metal itself or assigns production rights to another company, the cost to the government will be refunded.

Fringe Theories Are Out

Chairman Howrey says the FTC proposes to work as Congress intended

The Federal Trade Commission will not concern itself with "fringe" theories, such as "conscious price parallelism," the "mill net" theory, and the like.

It will not extend or formulate new per se doctrines under which certain practices automatically are presumed to be violations of law even though there is no proof of actual or possible unfair injury to competition.

It will not use the "substantiality" test in merger cases; that is, it will not contend that mere size or participation in a "substantial" share of a market is sufficient grounds for declaring a merger illegal as such.

These were highlights of a speech by FTC Chairman Edward F. Howrey before the Texas Bar Association, San Antonio, Tex., July 2.

As presently constituted, he said, the FTC proposes to work as Congress intended—"to practice preventive law through administrative and regulatory activities as well as by the initiation and conduct of adversary proceedings." It should arrive at a decision only after thorough exploration of all factors bearing upon the particular problem.

"In the past," he said, "the trade commission has, I believe, followed the per se approach to a degree inconsistent with its status as an expert; the heart of the commission's work, as an expert body, is its fact finding."

Timken Roller Bearing Co.

Roller Bearings: Sales Upturn Sought

Volume in the first half, 1954, was down 15 to 20 per cent from year-ago levels. Producers strengthen sales forces, develop new products

DEVELOP new products and sell more aggressively. Those are the tactics the roller bearing producers hope will turn their sales curve upward in the second half of 1954.

Sales in the first half were off 15 to 20 per cent from the like period in 1953. Most executives contacted by STEEL believe the decline has leveled off. They look for a slight upturn after the summer months. Dollar volume, according to government figures, totals about $500 million for all antifriction bearings with roller bearings accounting for 40 per cent of the market.

Quick Look—Bright market spots currently for roller bearings are in aircraft, instruments and the oil industry. Softness is occurring in the automotive, agricultural, machine tool, railroad and steelmaking segments.

For bearing buyers, the outlook is excellent. Most producers are ready now to accommodate the World War II rush-rush man who wanted everything "delivered yesterday." And if he's looking for something new and better, the bearingmakers have got that for him too.

New—Timken Roller Bearing Co., Canton, O., for example, recently announced two new developments which it is betting on to boost sales. One is a new freight car journal bearing application which can be used with both the integral box and the pedestal types of side frames. The other is a lower priced set of tapered roller bearings for use on auto front wheels.

McGill Mfg. Co. Inc., Valparaiso, Ind., has recently developed a sealed full type roller bearing. Officials report that they're gradually changing over from manufacturers agents to direct factory representatives in their distribution. Company sales for the first half of 1954 were up 5½ per cent over the first half, 1953.

Sales Steps—Roller Bearing Co. of America, Trenton, N. J., says it's enlarging its sales staff, and Marlin Rockwell Corp., Jamestown, N. Y., is intensifying its campaigns to step up sales.

One possibility which bearingmakers are eying is the government's defense appropriations which are being stepped up (see STEEL, July 5, p. 35.) An estimated 10 to 15 per cent of roller bearing sales currently go to defense. Increased defense spending would not only expand that market, but it would probably be reflected in other markets as well.

NLRB: Case Load Lightened

Jurisdiction rules changes by the National Labor Relations Board will exempt more small companies from the board's supervision in the future.

In an effort to cut its case load, NLRB has made these changes:

1. Direct overflow of a company's interstate business required to warrant NLRB jurisdiction was raised from $25,000 to $50,000. For intrastate operations, the volume of goods or services must also be $50,000 to interstate companies to bring the supplier under the board's jurisdiction.

2. A new board requirement is that truckers and similar firms which are "links in interstate commerce" do at least $100,000 a year business for other interstate business to be under the board's sway. Henceforth, a franchise from a national enterprise, like an auto manufacturer, will not be enough by itself to bring a company within federal jurisdiction.

3. The jurisdiction will not be exercised over general or public office buildings merely because such buildings have tenants who are under NLRB jurisdiction.

Companies exempted from the NLRB's supervision will now be subject to state labor relations boards. Where no boards exist, labor-management affairs of exempted companies will be unregulated except as state law governs.

United Press

Suppliers Seek To Reverse Declining Railroad Equipment Expenditures

1954	$1.0 billion
1953	$1.2 billion
1952	$1.3 billion
1951	$1.3 billion

AMERICA'S RAILROADS are being taxed to death, bargained to death and regulated to death.

That's what Benjamin F. Fairless said at the Committee of Railroad Suppliers' kickoff of an intensive campaign to tell the public just how big a chunk of the American economy the railroads account for—and how much bigger that chunk would be if the railroads were allowed to run their own affairs.

The 22 companies that recently formed the committee are betting over $100,000 on a remedy they hope will help reverse the railroads' ride toward death's door.

Role—The function of CRS is "to help build confidence in the railroad industry by interesting the business community in what that industry has done and is doing to help itself," says E. O. Boshell, chairman and president of Westinghouse Air Brake Co. and a member of the CRS executive committee.

To achieve its objectives CRS is aiming at showing businessmen just how important the health of the railroads is to the health of their own businesses. The campaign will also tell the public about the job of modernization that the railroads are doing. So little of this modernization is apparent to a nonrailroader that many people have the idea that railroad management is just sitting in a parlor car watching the world go by.

Money, Money—What the railroads need is money. But their low earnings—about 3½ per cent with most of that going back into the business—keeps them from getting capital for improvements on the stock market. And, besides, they already have a debt of some $10 billion.

So any money that they spend has to come directly from revenue. But high taxes, disadvantageous labor contracts and government regulation are combining to eat up most of what the roads make and to keep them from operating at anywhere near peak efficiency. If any or all of those burdens can be lightened, CRS figures, the result will be a growing market instead of the present shrinking one.

Measure—Just how important are the railroads? Well, Mr. Fairless pointed out in his talk that about one-tenth of the nation's working population depends in some degree upon the railroads for its livelihood; about 1¼ million are directly employed by the roads.

Since World War II the railroads have spent $39 billion on maintenance, another $10 billion on modernization. In 1953 alone the roads bought about $3⅓ billion worth of supplies.

Steel User—Last year they consumed 5.5 million tons of steel, 7 per cent of all the steel produced in this country. This year they probably will buy only about 4 million tons. Mr. Fairless says, "Some 13,000 steelworkers are out of jobs today because the railroads cannot buy the equipment that they should buy and would buy if they could afford to do so."

And that's not all the story. It takes about 4 tons of raw materials to produce one ton of finished steel, so the decline of 1.5 million tons in railroad purchases will mean a total loss of about 7.5 million tons of freight.

Railroads Miss Defense Goal

American railroads are 82,000 cars behind the mobilization goal of 1,850,000 railroad freight cars and it will be impossible to make up the deficiency by the end of 1954, G. Metzman, chairman and president of the American Railway Car Institute, told a roundtable of industry and government members.

Old cars currently are being retired at close to the normal rate of 60,000 cars annually, while orders for new cars are nowhere near that figure. Since Jan. 1, 1954, total backlog of orders for cars has decreased from 29,950 to 15,615. Up to June 1, employment in car builders' shops had decreased 35 per cent this year, and five plants had shut down.

Industry spokesmen said the railroads cannot go on indefinitely meeting "subsidized" competition and deplored the recent suspension of proposed tariffs on piggy-back hauling by railroads.

COST OF PROPOSED PIGGY-BACK SERVICE VS. ALL-RAIL & ALL-TRUCK*

(On manufactured iron and steel, Pittsburgh to New York)

Service	Minimum Weight (Pounds)	Rate	Charges
Rail	40,000	55	$220.00
	80,000	50	$400.00
Rail-Trailer	23,000	68	$156.40
	32,000	55½	$177.60
Truck	23,000	68	$156.40
	32,000	55½	$177.60

* Rates include all increases.

Erie Railroad

Railroads Court Metalworking Traffic

Poor equipment and poor service hurt rail traffic after World War II. Motor carriers made hay. Now railroaders say they're ready and able to woo traffic back to the rails

RECENT RAIL RATE reductions on selected iron and steel products were only one thrust in a new offensive by the railroads to regain traffic lost after World War II. Piggy-backing is another sally pointed at the same target.

Chief beneficiaries of the new railroad offensive will be shippers and receivers, including many metalworking firms. If direct cost reductions are not realized, chances are good service will be improved.

Quick Benefit—The rail rate reductions on selected iron and steel products in the Official Territory (northeastern U.S.) have already diverted some traffic back to the rails. It's generally agreed that the diversion has amounted to no less than 5 per cent and probably no more than 15 per cent of the traffic involved.

What does that mean to steel shippers and receivers? One manufacturing firm reports its Detroit plant shifted from nearly 100-per-cent motor carrier steel shipment to 100-per-cent rail steel shipment. "There's a 6-cent-per-hundredweight differential, you know." Other steel shippers report varying diversions with appreciable cost savings in each case.

What Next?—Railroaders don't believe the diversion has yet had time to fully develop. Many large users of steel have told the railroads they intend to shift over to more rail shipments as soon as revision of traffic patterns can be completed.

Some trucking firms have already been hurt by the diversion. At least two firms attempted to reduce their prices. Those truckers unsuccessfully attempted to create a new column of truck rates with a 45,000-pound minimum which would have been 2 cents a hundred lower than the truckers' present 32,000-pound minimum rates. Majority of truckers want to hold the status quo until the Interstate Commerce Commission completes its consolidated investigation of common and contract motor carrier and rail freight rates on iron and steel articles. That's slated for Sept. 14, 1955.

Hold the Line—Thus, don't look for more general rate adjustments in the near future similar to the rail adjustment of early this year. The railroads aren't considering them for the present and truckers generally are against trimming rates for fear local adjustments will spread to business not affected by rail competition.

What you can look for is a knock-down fight over piggy-back service. Basically the question is how far the railroads will be allowed to go in owning and operating exclusive piggy-back equipment and service. Truckers want to own and operate piggy-back trailers, using the rails merely as an alternate means of accomplishing long hauls and paying the railroads for the service as used. The New York Central before its recent top management change had favored such a plan. Present policy is unknown.

All New — Railroad-owned-and-operated trailers, using trucking firms only for local deliveries, is the plan favored by six eastern roads, including the Pennsylvania; Baltimore & Ohio; Erie; Delaware, Lackawanna & Western; New York, Chicago & St. Louis; and the Wabash. This plan requires new railroad tariffs and it was those proposed tariffs that the ICC suspended until Jan. 15, 1955. Hearings on these tariffs before ICC are slated for July 27, 1954.

Piggy-backing is an attempt to regain "merchandise" traffic for the rails. Listed in the proposed tariffs, for example, are electrical equipment or parts; dishwashing, clothes washing, and ironing machines; and fans, blowers and

parts. One eastern railroad executive said, commenting on expected piggy-back tonnage, "If the rates are allowed to go into effect later . . . it is our expectation that iron and steel articles would constitute a substantial share of the tonnage." For what proposed piggy-back service would mean pricewise, see the table on page 71.

Eyes on ICC—Tied in with the hassle in ICC over piggy-back rates is the request from the New Haven railroad for clarifying statements from ICC on 12 points of legality of its piggy-back service, in operation since 1937. Hearings on these 12 points are being heard now. Decisions on them will go a long way toward establishing national policy on piggy-backing.

Defense Contracts in the West

Defense business isn't busting out all over on the West Coast, but there are a few hot spots.

Food Machinery & Chemical Corp., San Jose, Calif., has been given more than $1 million in new and supplemental Army Ordnance Contracts. In addition to a new research and development contract for cargo tractors, the firm was given an increase in its existing production contract for M-59 armored infantry vehicles and for cupolas and gun mounts.

National Motor Bearing Co. Inc., Redwood City, Calif., was awarded an automotive equipment order calling for 30,000 oil seals worth $20,442, to be used in Army Ordnance automotive equipment. Pacific Car & Foundry Co, Renton, Wash., received a $1.2-million contract, believed to be for self-propelled army artillery vehicles.

NATO Projects Open to U.S. Bids

American firms will be given a chance to bid on contracts under the military construction program of the North Atlantic Treaty Organization, say Departments of Commerce and Defense. Specific opportunities will be reported through Commerce's Bureau of Foreign Commerce.

Total cost of projects in Norway, Denmark, the United Kingdom, the Netherlands, Belgium, Luxembourg, France, Portugal, Italy, Greece and Turkey exceeds $2 billion. Some $1.6 billion has already been approved, and much of it is still available for international competitive bidding. The remaining $400 million is earmarked for programs during 1954-1956.

Mass Production on the Heavy Side

No one takes mass production lightly at E. W. Bliss Co., Canton, O., maker of presses and rolling mills. Where even "small" parts may weigh tons, mass production tools and techniques take on elephant proportions. Multiple machining of large castings, as shown above, is one way Bliss saves production dollars

Competitive or Not?

Defense department studies aim at getting military out of civilian-type business

ANOTHER ATTEMPT to get the government out of competition with private business has come from the Defense department, which has instructed the military departments to begin a study of 18 military-operated commercial and industrial-type facilities on the basis of military essentiality and other standards.

The new series of studies will be similar to the current program involving 13 kinds of industrial-commercial operations. The whole program is designed to analyze and reduce those military activities "which may unnecessarily duplicate private enterprises in the production of goods or services," says Thomas P. Pike, assistant secretary of defense (supply & logistics). Eight of the original studies are to be submitted to the Defense department on Aug. 8, while the remainder will require more time for completion.

Some Metalworking—Several of the facilities are of a metalworking nature, the most important of which is the chain manufacturing facility at the Boston Naval Shipyard. This study will be completed 150 days from the date of the order.

The other facilities to be investigated and reported upon within one year of the date of the order are: Acetylene manufacturing; automotive repair shops; cafes and restaurants; caustic soda manufacturing; cement mixing plants; chlorine manufacturing; cobbler shops; ice plants; office equipment repair shops; oxygen and nitrogen manufacturing; power line construction; power plants; tire retreading activities; tree and garden nurseries; wood preservation; argon manufacturing and freon manufacturing.

Engineering Awards Dip

Engineering project awards in 11 western states are running 34 per cent behind the 1953 period for the first six months of 1954. That's $1,291,703,142 for first half, 1954,

compared to $1,947,097,942 for first half, 1953.

Not all categories of engineering projects are slumping, however. Street and road work contracted for in first half this year totals $199,014,234, up from $182,661,131 in first half, 1953. Tunnel work awards are $6,182,990 in first half, 1954, compared with $1,944,058 for the like 1953 period.

Sets Surplus Property Policy

Industry and the Department of Defense have agreed on a plan to dispose of surplus property, the salient feature of which is a provision for withholding such property from sale on the commercial market if it would affect that market adversely. If such is the case, the appropriate industry division of the Commerce department would make technical recommendations on the situation to the assistant secretary of defense (supply and logistics), who would make the final determination.

At its first meeting, a joint committee of the Defense department and General Services Administration decided on the following features of the new plan:

Carrying advance notice in Commerce department publications of all surplus sales in the U. S. when the property has an acquisition cost of $250,000 or more.

Setting up a procedure to accept sealed bids when the buyer cannot attend an auction.

Establishing a uniform deposit of 20 per cent of bid price when a deposit is required.

Appointments in Washington

Senate confirmed nomination of John C. Deofer of Wisconsin to a 7-year term on the Federal Communications Commission. He has been filling an unexpired term on the commission.

Frederick Stueck, St. Louis lawyer, was nominated by President Eisenhower to a 5-year term on the Federal Power Commission.

Industrial Distributor Dies

Charles V. Pattison, 61, died July 6 in Cleveland. He was president of W. M. Pattison Supply Co., distributor of industrial supplies, machinery and equipment.

It Must Be the Heat

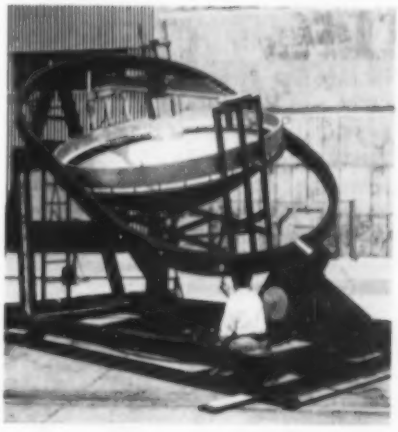
SUMMER'S HOT SUN is throwing light on the problem of converting solar energy directly to useful work. Solar batteries, generators and furnaces have all turned up in the recent news.

Wide World

Solar generator producing one-third volt of current directly from sunlight is demonstrated at Air Research & Development Command's Wright Air Development Center near Dayton, O. The generator employs a cadmium sulfide transducer to trap the radiant energy of sunlight

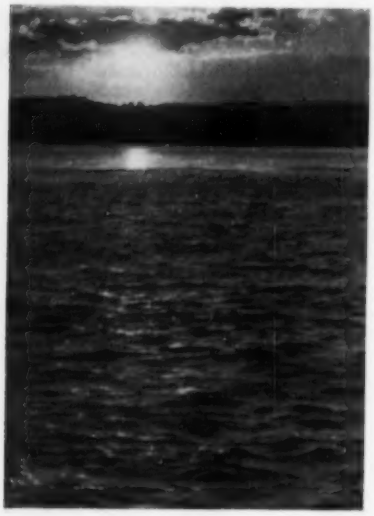
United Press

Bell Telephone Laboratories, Murray Hill, N. J., developed a solar battery capable of powering a radio transmitter with an operation potential of several miles. The battery is composed of strips of specially prepared silicon which convert sunlight directly into electrical energy



At Consolidated Vultee Aircraft Corp., San Diego, a 120-inch solar furnace is being used for experimental work on metals and refractories. Temperatures of 8500° F are obtained at the focal point of the furnace when sky conditions are ideal. The mirror is made of polished aluminum

By E. C. KREUTZBERG *Washington Editor*



New Water Conversion Methods: Two-Way Help for Industry?

NEW PROCESSES may enable production of fresh water from salt water at 30 to 80 cents per 1000 gallons.

If two research projects sponsored by the Department of the Interior develop as expected, a big new equipment market will be on the horizon and industrial water shortages will be relieved. It takes 250 tons of water to make a ton of steel, 18 barrels of water to produce a barrel of oil and 42 gallons of water to produce a pound of rubber.

One of the new promising processes is being developed by Badger Mfg. Co., Cambridge, Mass. It involves a radical type of vapor compression distillation based on the principle that water can be made to evaporate and condense at a small fraction of the energy losses hitherto regarded as minimum. The trick is to condition the water mechanically in a machine to encourage rapid boiling.

The machine, essentially a boiler without tubes, already has shown a heat transfer rate at least five times that of existing vapor stills. The company presently is working on mechanical problems encountered by having numerous moving parts in contact with brine.

The other new promising process is under development by Nuclear Development Associates, White Plains, N. Y. It employs separation at exceedingly high temperatures and pressures—about 5000 pounds per square inch (300 atmospheres) at which pressure some 800 degrees F is generated. At such pressures and temperatures water is in a "supercritical" state in which vapor and liquid phases are indistinguishable. In this state separation of the salt occurs without the loss of latent heat that occurs in usual distillation processes.

The equipment is simple—high-pressure pump, heat exchanger and separator—and it has high capacity. The big need is to find low-cost materials that will resist the highly corrosive action of brine at high pressures and temperatures.

For Other Water, Too . . .

The above processes are meant especially for conversion of sea water. Other processes that are making encouraging progress are aimed more at converting brackish and mineralized ground and surface water encountered in important inland areas.

Those include: 1. The electrical membrane approach being developed by Ionics Inc., Cambridge, Mass.; Rohm & Haas, Philadelphia; and the Polytechnic Institute, Brooklyn, N. Y. 2. Osmotic membrane method under development by the University of Florida and the University of California at Los Angeles. 3. Solvent extraction processes under study by Texas A & M Research Foundation. 4. Solar distillation, under development by George O. G. Lof, Denver; New York University; Bjorksten Laboratories, Madison, Wis.; and the University of California at Berkeley.

Costs in Line . . .

How does the hoped-for 30-to-80-cent cost range for converted water compare with present costs of fresh water?

Irrigation water costs a few cents per acre-foot when pumped from artesian wells; it costs up to $40 per acre-foot, equivalent to about 13 cents per 1000 gallons, when expensive construction and water way systems are required. The municipal water that you use in your city home or plant is produced at costs ranging up to $100 an acre-foot, or about 30 cents per 1000 gallons. For some industrial uses present water system costs are even higher.

A number of interests, including the Navy, now are converting saline into fresh water at around $500 to $600 an acre-foot, or about $1.50 to $2 per 1000 gallons. Two of the equipment manufacturers estimate that if very large plants were built, using existing processes, the cost might be about $400 an acre-foot, or about $1.25 per 1000 gallons.

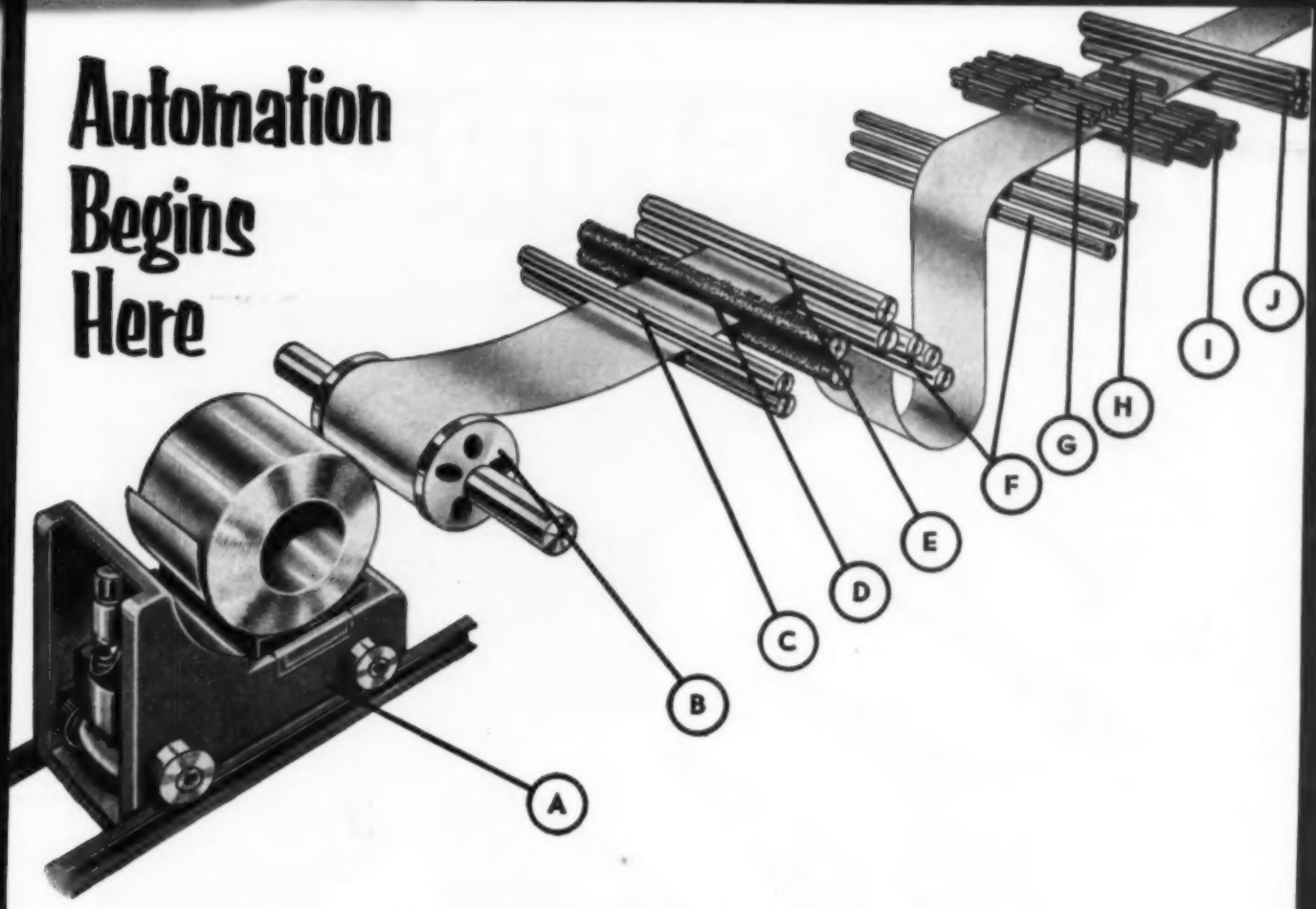
So it is a safe bet that equipment to produce converted fresh water at 30 to 80 cents per 1000 gallons would find wide acceptance.

Objectives Broadened . . .

Up to now, the government program has been concerned mainly with water for irrigation and municipalities. Now it is being broadened to put increased emphasis on industrial water.

The Saline Water Conversion Program in the Interior department was set up by Congress in 1952 for five years, with authority to spend $400,000 a year. Most of this money goes to companies and institutions on research contracts. Responsible for administering the program is Fred G. Aandahl, assistant secretary for water and power. David S. Jenkins is director of the Saline Water Conversion Program.

Automation Begins Here



Automation—the automatic handling of work in process — permits manufacturers to combat high labor and material costs by boosting man-hour production. McKay has played a large part in this movement by designing and building "automated" equipment for the automotive and steel fabricating industries.

For example, coil feed lines of the type illustrated above were designed and built by McKay for several leading automotive firms. They are used to automatically feed coil stock into square shears or blanking presses, thus eliminating inefficient and laborious methods of manually feeding these machines.

TYPICAL LINE EQUIPMENT

(A) Hydraulic Loading Car for stand-by coil.

(B) Cone Type Coil Holder handles wide range of coil I.D.'s and O.D.'s.

(C) Guide Rolls to direct strip into brush rolls.

(D) Brush Rolls with solvent sprays to clean strip.

(E) Driven Pinch Rolls for pulling coil stock and filling storage loop.

(F) Guide Rolls to support loop.

(G, I, J & H) Feeder unit consisting of Backed-Up Leveler **(G-I)** and pinch rolls **(J)** is powered by D.C. drive which is controlled by a measuring device driven from measuring rolls **(H)**. The feeder flattens the strip and accurately measures it into open press dies or through shear knives.

Line operation is synchronized with the press or shear for maximum production. McKay builds these units with design, speed, and capacity dictated by your job requirements.

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20,000 rpm

Series 1
12,000 rpm

Series 2
Cone Grinder

Series 2
Angle Grinder

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Series 3
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There's a size and style to fit all your grinding applications!

Series 4
Heavy Duty

Check these advantages over any previous air grinder:

- Over-speed Safety Coupling
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One of our AIR engineers will gladly provide a convincing metal removing demonstration of these powerful grinders. There's no obligation on your part — just phone or write — we'll do the rest.

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U. S. Exports of Selected Metalworking Products
(as a percentage of total output)

	1953	1952	1951	1950
Iron & steel mill products	4.0	6.3	4.3	4.1
Hand tools	na	10.2	8.7	7.8
Refrigerators & freezers	15.6	15.0	10.8	4.3
Washing machines	2.3	1.9	1.8	1.2
Vacuum cleaners	2.0	0.9	0.7	0.6
Ranges	1.7	1.4	1.0	0.3
Radio & TV receivers	4.8	4.5	2.8	2.1
Internal combustion engines (except auto and aircraft)	na	9.8	12.4	13.1
Industrial trucks and tractors	na	7.8	8.6	9.0
Machine tools	10.2	11.5	10.7	21.1
Rolling mill machinery & parts	na	27.1	34.9	53.5
Construction & mining equipment	na	21.8	18.7	19.2
Graders	31.0	32.8	29.8	26.6
Textile machinery	na	21.4	21.6	23.2
Food products machinery	na	15.8	15.0	14.1
Ball & roller bearings & parts	na	5.3	4.0	3.5
Office appliances	na	11.7	16.2	14.9
Tracklaying tractors	45.1	37.2	36.6	38.9
Passenger cars	3.0	3.9	4.6	2.3
Complete civilian aircraft	36.6	12.8	20.0	43.6

Source: International Economic Analysis Division, Bureau of Foreign Commerce.
NA = Not available.

Export Markets: Worth Fighting For

Exports of all types of machinery and vehicles represent over one-third of total U. S. exports in 1953. But some metalworking industries are bucking a downward trend

NEARLY ALL types of U. S. metalworking industries have some stake in export markets — some small, others quite substantial. But in the aggregate it's important.

Exports of all types of machinery and vehicles, for example, represented over one-third of total U. S. exports in 1953, says the Bureau of Foreign Commerce.

Big Markets — Industries for which exports are quite important include: Office appliances where exports account for 10 to 15 per cent of total output; construction, mining and textile machinery where exports account for 15 to 20 per cent of total output; tractors where, in addition to the tracklaying type listed in the table above, exports account for 20 to 35 per cent of total output in the contractors wheel-type and from 15 to 20 per cent of output in other wheel-types; and refrigerators where exports account for 10 to 15 per cent of total output.

For other U. S. metalworking industries, export markets represent slowly and steadily growing markets. For example, exports of hand tools have grown as a percentage of total industry output from 7.8 per cent in 1950 to 8.7 per cent in 1951 to 10.2 per cent in 1952. In ball and roller bearings and parts production, exports have grown from 3.5 per cent of total industry output in 1950 to 5.3 per cent of total output in 1952.

The Pinch — With recovery of European industrial production and decline in U. S. military aid spending abroad, resistance to these American exports has been increasing. Figures for first quarter, 1954, show dollar sales of most metalworking products are off considerably from a year ago. Machine tool sales abroad, for instance, amounted to $48.8 million in first quarter, 1954, compared to $61.1 million in fourth quarter, 1953, and $81.2 million in first quarter, 1953. Exports of construction and mining equipment were only $95.3 million in first quarter, 1954, compared with $106.7 million in fourth quarter, 1953, and $125.9 million in first quarter, 1953.

Other types of metalworking products are continuing to find larger outlets abroad, however. And over-all U. S. merchandise exports for May, 1954, at about $1388 million are estimated by the Commerce department to be approximately 5 per cent above the 1953 monthly average of $1314 million.

Dent in Foreign Aid Request

The House approved a foreign aid program giving President Eisenhower more than 95 per cent of the funds for which he had asked. Only $109 million was cut out of the request, leaving $3,368,608,000 in spending authority by government agencies.

Hooker in the House bill was an amendment which specified that it was the intent of Congress that not one dollar of the money was to go for aid of countries ". . . which are committed by treaty to maintain Communist rule over any defined territory in Asia." The amendment would not be binding upon the President, merely advisory.

Europe's share of the military and economic aid would be $986.5 million; the Far East and Pacific territory would get $1768.9 million; Africa and India would get $599.1 million; Latin America, $47 million; and supplementary programs, $165.5 million.

British Book Large Order

The British steel industry booked a $14-million order for railway track material for delivery to Persia—largest single order of its kind for the British since the war. Delivery over three years will be made of 100,000 tons of steel rails and 4000 tons of fishplates, bolts, washers and other accessories.

How Does Your Organization Compare?

1. **Is it clearly functionalized?**
2. **Are the functions grouped for effective administration?**
3. **Is your organization simple?**
4. **Is your organization flexible?**
5. **Does your organization properly control and co-ordinate all activities?**

ORGANIZE TO PROSPER

By M. K. SHEPPARD
Management Consultant
M. K. Sheppard & Co.
Cleveland

Whether your company is big or little, you are soundly managed if you are soundly organized. Here, a management consultant tells how your firm can function better

ORGANIZE—that's the fundamental principle of sound management.

So believes Gen. Lucius D. Clay who ran the Berlin Airlift and now runs Continental Can Co. as its board chairman. Says he: "The art of management is the same wherever you are—in the Army, government or business."

The Problem—At Continental Can, General Clay had to knit closer together 60-odd plants spread across the nation. Applying his fundamental principle, he established a vice president over each major division and an executive vice president over all of them. By so doing he replaced a sales head and manufacturing head in each division so that clashes between the two would not end up on his desk.

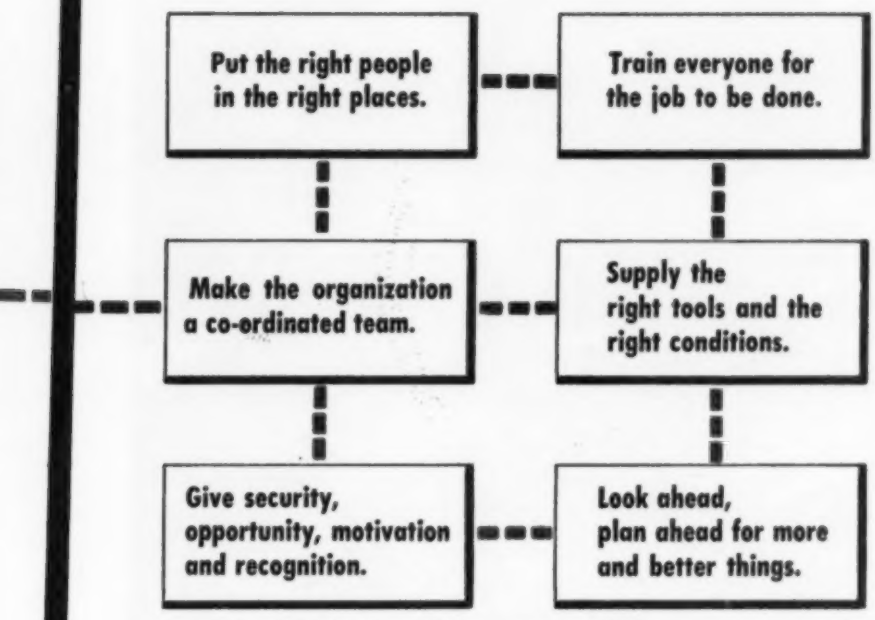
Here's how the setup works. Each month the vice presidents meet with General Clay to consider the past month's operations. Then similiar operating control meetings are held down the line of organization more frequently and in greater detail. In this way, effective control is maintained by top mangement — unsatisfactory results and persons "out of line" at a plant or division can be spotted immediately for corrective action.

Spell It Out—It's essential for good management that this organization be clearly functionalized. Each function from top to bottom should be defined with job specifications prepared so that the supervisor clearly knows his authority, responsibility and method of reporting. That will avoid overlapping, undercutting and duplication of effort.

One subject not clear to many executives is the distinction between line and staff functions. A line function is one of administration—the job of the doer. A staff function is advisory—the job of determining the best way to meet an objective. Regardless of whether an executive is line or staff, his basic responsibilities are to administer and to initiate new ideas for greater effectiveness.

Cut Loose Ends—The second basic requirement for good organization is practical grouping of functions for administrative purposes. Eliminate loose ends by giving ALL sales functions to sales executives, ALL manufacturing functions to manufacturing executives, ALL financial to the treasurer or controller, ALL engineering and development to the chief engineer and so on.

Simplicity is important to organization. Layers of authority and responsibility should be kept to a minimum to cut down delay in


Put the right people in the right places.
Train everyone for the job to be done.
Make the organization a co-ordinated team.
Supply the right tools and the right conditions.
Give security, opportunity, motivation and recognition.
Look ahead, plan ahead for more and better things.

Developed by Charles E. Wilson, Secretary of Defense and former GM president, the above principles are displayed in every GM plant

transmission of ideas to action. Men in positions of authority should have a minimum of subordinates—a good manager never deals directly with more than ten men. And no subordinate should have more than one boss.

Learn the Chain—Lines of reporting should be clear-cut. Each executive should know where he reports and the chain through which his requests and ideas are transmitted. Most important, each executive should have a clear concept of the path of advancement which he may take from the bottom to the top.

A fourth factor in good organization is flexibility—an organization must change with changing times. Functions, scope of authority, responsibility and jurisdiction should be identified so that modification can be made easily and quickly without disturbing the organization and without compromising principles. Organization should change as regularly as the needs of the department, division or corporation.

A Must — Every organization must be co-ordinated and controlled. That consists of planning the volume of sales, maintaining adequate capital funds, engineering better products, budgeting manufacturing, regulating the work force, controlling salaries, wages and inventories.

Your first order of yearly business should be the planning of sales volume and product engineering, together with the manufacturing program to meet that volume. Product, plant engineering and manufacturing operations are then budgeted consistent with the over-all plan. The practice of these fundamentals can mean survival or failure of a business in periods of declining activity.

An Example—General Electric Co.'s new Appliance Park at Louisville is an excellent example of the principle of organization. Here GE is placing in a single group the previously scattered segments of its major appliance divisions. Management, production and distribution are all at one point.

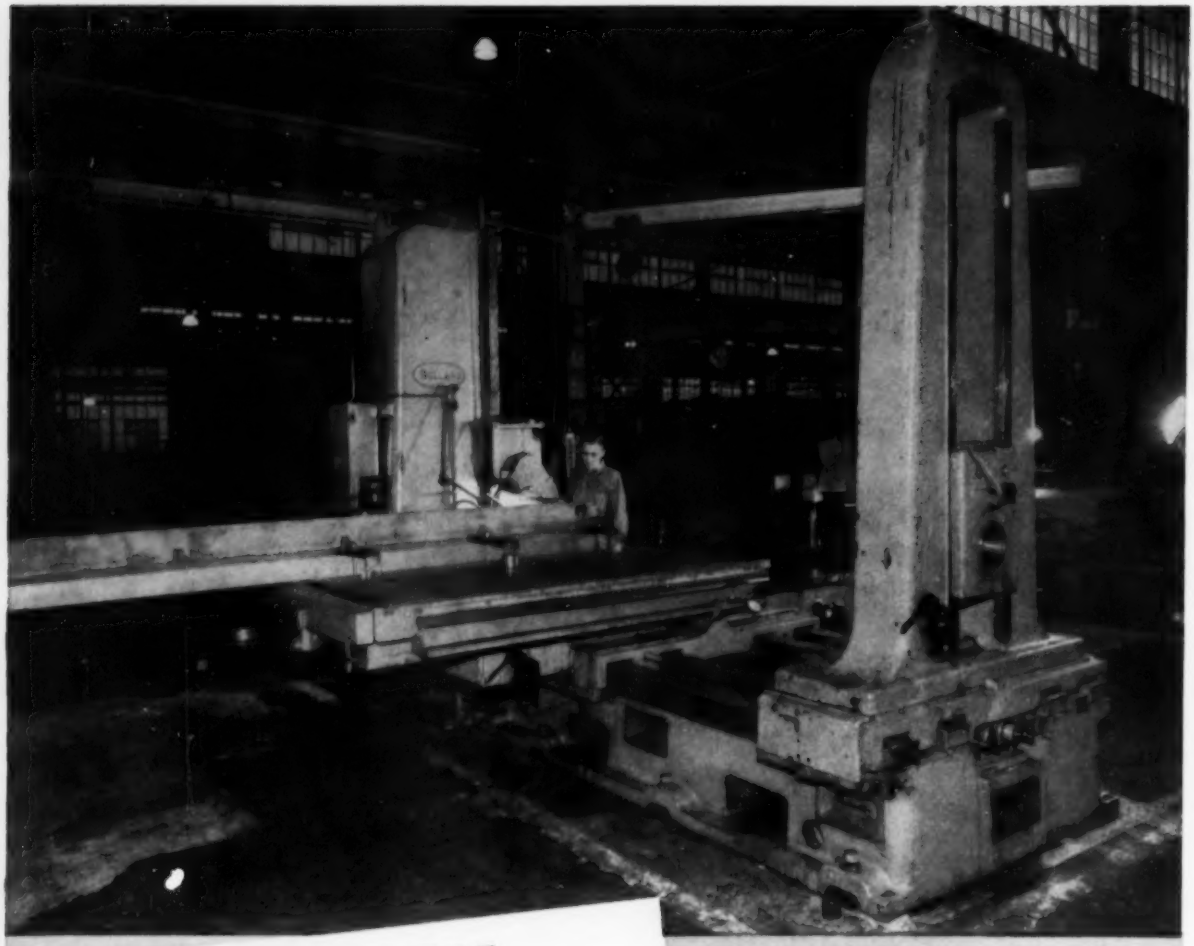
Appliance Park will account for about 10 per cent of GE's $3 billion annual volume. The division is big by any standard, but it will be as simple to control as a set-up one-tenth its size.

The Strata—At the top will be a division vice president with a staff of specialists in marketing, advertising and sales. Five general managers will run five operating departments producing home laundries, air conditioners, freezers, ranges and electric kitchens. Each department will have its own building and its own staff for marketing, selling, engineering and manufacturing. All decisions will roll out of one location and they will be judged on the results.

Vice president in charge of each division has authority to make all decisions except to draw money. Once a yearly budget is authorized, he is on his own for a year. His budget is flexible, and he can overspend on one product several times if volume permits and if the profit and return on the investment are in line.

Centralized Authority—He and his managers can allocate advertising dollars in any way they see fit. They can hire and fire advertising agencies, dealers, distributors, or factory staff or line people. This arrangement pinpoints the responsibility quickly. This arrangement eliminates the word "they", meaning the New York home office.

At General Motors Corp. Alfred P. Sloan spent his lifetime developing the principle of organization. He took a sprawling, quarreling group of companies that were ready to fold. His organizing ability made billions for GM. Realizing there is still much to learn about management organization and working relations of people, he gave Massachusetts Institute of Technology $6 million to found a school of industrial management for continuing research on how to make management more successful. Measured by benefit to workers, industry, customers, the nation or by profit—can you think of anything more successful than General Motors?



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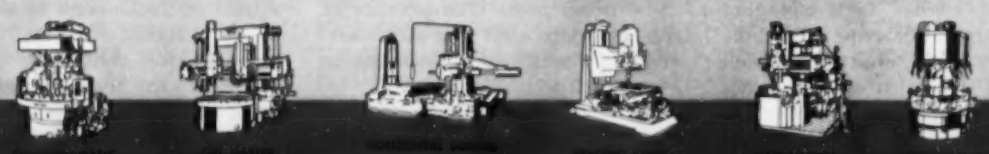
With keener competition and manufacturing costs increasingly important, new products, methods, materials and cutting tools have made it necessary to revaluate standards of present day procedures. Modern tools such as the Bullard Horizontal Boring, Milling and Drilling Machines are designed and built to give you full advantage of these modern developments insuring maximum performance, accuracy and dependability for years to come.

Ask your Bullard representative to call and explain its application to your work or write to



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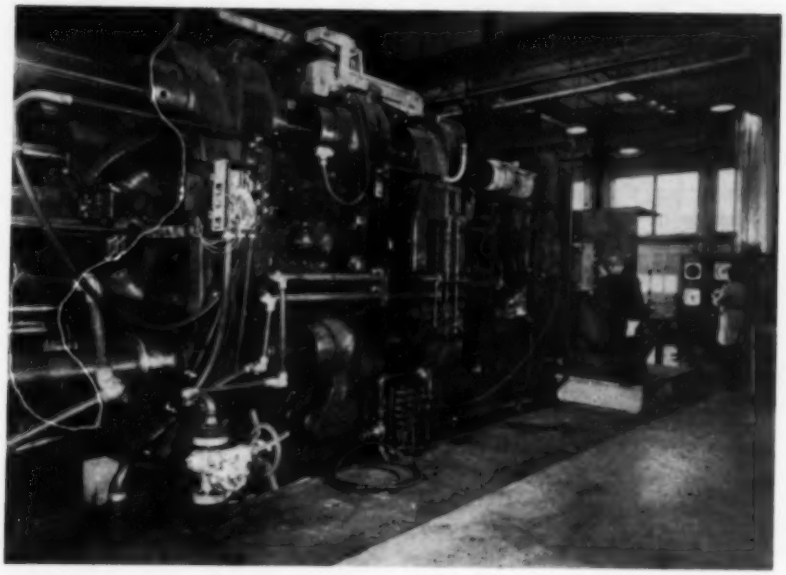

Doehler-Jarvis Hopes Giant Die Caster Will Bring New Auto Uses

DETROIT

THE AUTO INDUSTRY occasions more die casting than all the gambling rooms in Nevada.

From grill and carburetor body to gravel guards and tail light bezels, the auto is an avaricious user of things both shiny and useful. Figures indicate that 48 per cent of the nation's zinc die castings go to the auto industry, with 30 per cent of the magnesium and 25 per cent of the aluminum so spoken for. It is the latter that attracted the attention of Kaiser Aluminum & Chemical Corp., prodigy of the automaking Kaisers, for the obvious and sound reasons that more use of aluminum and lower cost auto parts would spread mutual backscratchings in the Kaiser empire.

D-J Takes a Look—Also interested somewhat more than casually was Doehler-Jarvis Division of National Lead Co., already shipping 45 per cent of its output autoward and not averse to advancing mankind, civilization and its wedge in the auto company door.

The result of that interest is revealed as the largest die casting machine ever built, according to the collaborators. Conceived more than five years ago and more than two years in the building, the machine was designed primarily for aluminum and with the automotive industry in mind. Aluminum castings up to 75 pounds in weight can be turned out, and when adapted for zinc the parts will tip the scales at 200 pounds.

New Standards?—By previous die casting standards, zinc parts up to 45 pounds and aluminum parts of 20 pounds were considered the maximum, with 48-inch machines the largest operated by Doehler-Jarvis to turn out automotive transmission housings, automobile grilles and other large die castings. The new device, however, is described as a "72-inch machine" which will handle dies up to 50 tons in weight.

Utilized in the machine is a new double-toggle action, permitting the dies to be opened up to 36 inches for part removal, adding a "3-D" to castings, in the words of A. F. Bauer, chief engineer. On an aluminum casting weighing 75 pounds, the 72-inch machine could be operated at a production rate of 30 shots per hour and would consume in excess of 2250 pounds of metal per hour. To cope with this high rate of metal consumption, the machine has been equipped with two 12,000-pound reverberatories. One melts while the other holds.

Like a Spring—With a die closing pressure up to 3000 tons in some cases, the one-foot diameter steel tie bars 12 feet in length, which absorb the pressure, actually stretch one-eighth inch in length acting somewhat as springs to cushion the force. The shots require only 0.22 second to fill the present job on the machine, a telephone cable reel flange containing 42 pounds of metal fed under 6200 psi pressure.

Among the unusual problems inherent in castings of this size is the mass of metal involved per shot which must be maintained at its temperature in the ladle auto-

Auto, Truck Output

U. S. and Canada

	1954	1953
January	594,789	614,000
February	573,801	628,017
March	672,485	752,149
April	676,233	782,491
May	621,249	684,843
June	585,000*	713,206
July		757,595
August		641,152
September		605,228
October		651,153
November		457,852
December		529,588
Total		7,817,274

Week Ended	1954	1953
June 5	119,688	134,879
June 12	139,312	167,095
June 19	141,878	170,357
June 26	140,695	173,702
July 3	136,333	140,724
July 10	118,000*	167,560

Source: Ward's Automotive Reports.
*Estimated by STEEL.

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matically and handled in a water-cooled cold chamber. The ladle is tilted automatically, requiring 2.5 seconds to pour the 42 pounds of metal per shot into the sleeve. Shrinkage on the part runs up to 3/32 inch on the 40-inch diameter.

Future—Interest in the machine centers not only in the present achievement, but in its possible implications. For as Doehler-Jarvis Division General Manager Frank J. Koegler points out, "We have learned while developing the large die castings now in common use in the automotive industry that we can make aluminum die castings to compete with those usually made in cast iron.

"Potential uses of aluminum include die-cast motor blocks, rear deck lids, instrument panels, door frames and other large pieces," Mr. Koegler says. Observing that several auto companies are experimenting with sand and permanent mold aluminum engine block castings, he sees no reason why the present work should not lead to use of aluminum die castings.

Auto Reaction—Reaction of auto companies questioned by STEEL on the implications of the machine were: "We foresee no switch to aluminum engine blocks or major body parts, though the machine opens new possibilities which our designers will bear in mind." Essentially the problem is that auto companies are largely amortizing new tooling and facilities to produce their OHV V-8s. Savings and advantages of the die cast units would have to offset the quick tool write-off to make them justifiable.

Also somewhat chilling the mold is the fact that auto doors have already been die cast, with the observation that bodies were not being held to sufficiently close tolerances to create a good fit. With a stamped door, the fit man hits it a few times and everything's jake. Inflexible die cast frames could not be "adjustable."

For an Engine—The Doehler-Jarvis machine, according to scuttlebut, was built to cast an experimental Kaiser engine. Reports are now that the project has been dropped, though other auto companies may jump in where Kaiser left off.

With an estimated $240 million sales in 1952 which jumped to $320 million in 1953 and seem headed for an increase next year on the basis of 1955 model die orders, it appears that the die is far from cast in the die casting future.

Chrysler Hits 182.5 MPH

At the Chrysler press blowout introducing the proving grounds a couple of weeks ago, Jack McGrath turned a neat 179.3 mph in his third-place Indianapolis Hinkle Special. It was a foregone conclusion that he would top the mark of Leon Duray who turned 148.7 mph 26 years ago at the Packard Proving Ground track, but a disappointment to the newsmen was the fact that the Chrysler-powered Kurtis Kraft used by Firestone to test racing tires did not run.

The strategy of the situation this week became apparent when local newsmen were suddenly summoned to the Chelsea proving ground site again. There, ready to go was the Chrysler-powered job, out to "see what the Chrysler engine could do."

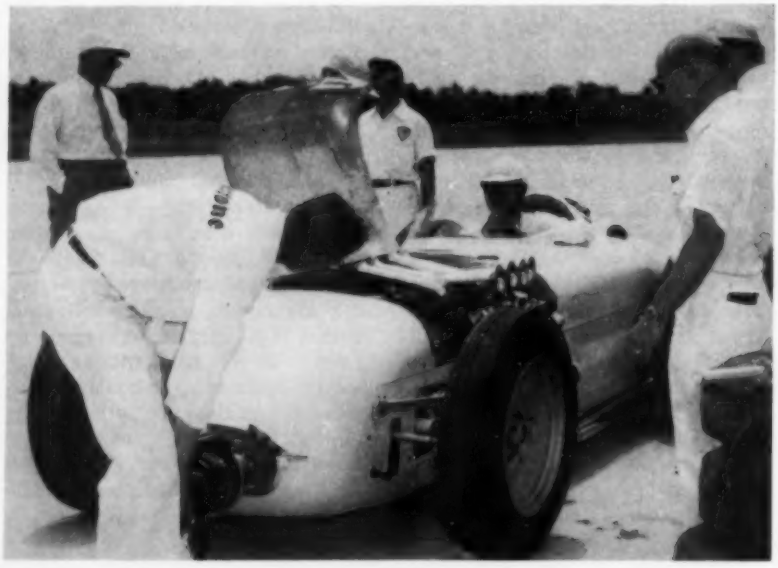
The Chrysler engine did plenty. Driven by Sam Hanks, the Chrysler-powered job lapped the track at 182.554 mph to establish a new closed course mark and give people an idea of what 447 hp means in miles per hour.

Before you start kicking the tires on your Chrysler when it only turns 115 mph, it should be underlined that the Chrysler mill was about as special as they come in the aspiration department. Fuel injection takes the place of regular carburetion and methanol is burned instead of gasoline. High-lift racing camshaft with roller follower tappets in place of hydraulic lifters, domed pistons to increase the compression ratio from 7.5:1 to 13:1 and magneto ignition all contributed to the higher output.

But the point of the Chrysler effort was to show the potential of their engine, a mighty imposing potential, indeed. Torquing 480 foot-pounds at 4400 rpm as against 330 foot-pounds at 2600 rpm in the standard passenger car version, and with 447 hp at 5600 rpm against 235 hp at 4400 rpm in the conventional Chrysler engine, there is plainly a nice high ceiling that should keep Chrysler dry for some time to come.

"Sport Spare" for Ford

A Swingaway continental kit for Fords from 1952 through 1954 is now available. Priced at $134.50 suggested list, the unit undoubtedly gets its "swingaway" name from the athletic aspects involved in changing a tire. Besides, "continental" is a word being saved for another purpose around Ford.



447 HORSES UNDER THE HOOD

. . . Chrysler shows what souping-up can do

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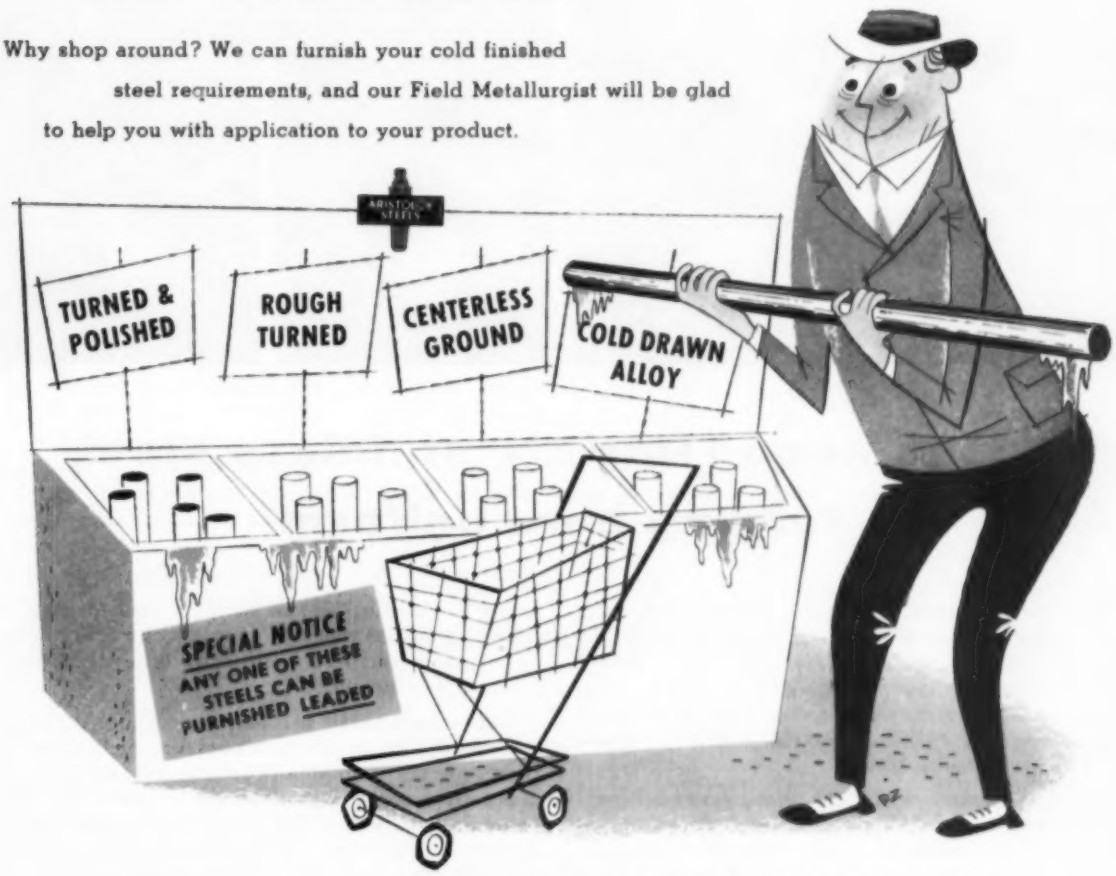

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YEARS AHEAD — THROUGH EXPERIENCE AND RESEARCH

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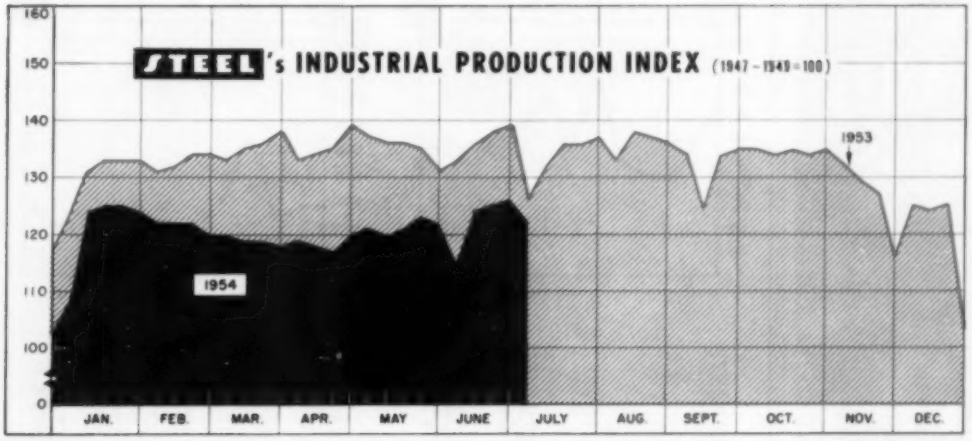

*Week ended July 3.

Based upon and weighted as follows: Steel Output 35%; Electric Power Output 32%; Freight Car Loadings 22%; and Automobile Assemblies (Ward's Reports) 11%.

Defense Spending Still Big Factor in Economy

DEFENSE SPENDING could well be likened to the old gray mare. While "she ain't what she used to be," there's still plenty of kick left in the old gal — about $45 billion worth. That's about what the government has in unobligated military funds, about half of which will find its way into the metalworking industry.

A new rash of contracts will help boost monthly defense spending to close to the $4-billion mark, up considerably from the $2-billion to $2.5-billion rate of the past several months. Almost half of the new spending will be for hard goods.

Crystal-Balling — An idea of what might be coming is the fact that during a two-day period recently, four contracts totaling almost $29 million were let by the Air Force and the Navy. General Electric Co. got two for $22.1 million and $1.04 million, Ryan Aeronautical Co. received one for $3.5 million and Mack Trucks Inc. got the fourth for $2 million.

But for the time being, production continues at a leveling-off pace with no real indications of an immediate upsurge. While it is true that STEEL's industrial production index hit the high point for the year during the week ended June 26 with a revised reading of 126 (1947-1949 = 100), it cannot be expected to climb back to that point until summer vacations are over. For the week ended July 3, which saw the beginning of the long July 4 holiday, the index took a preliminary dip to 122. With one full day (Monday) lost last week, the trend line is sure to drop even farther, and it will take quite a surge to bring it back up to 126.

On the Limb — Several weeks ago, this column said the index would go as auto production goes. That continues to be the outlook, for a while at least. While the May-June rush of auto assembling

BAROMETERS OF BUSINESS

	LATEST PERIOD*	PRIOR WEEK	YEAR AGO
INDUSTRY			
Steel Ingot Production (1000 net tons)[2]	1,424	1,568	2,092
Electric Power Distributed (million kwhr)	8,770[1]	8,981	7,915
Bitum. Coal Output (daily av.—1000 tons)	1,375	1,325	1,646
Petroleum Production (daily av.—1000 bbl)	6,475[1]	6,510	6,451
Construction Volume (ENR—millions)	$323.9	$312.9	$256.2
Automobile, Truck Output (Ward's—units)	136,333	140,695	140,724
TRADE			
Freight Car Loadings (unit—1000 cars)	715[1]	713	670
Business Failures (Dun & Bradstreet, no.)	208[1]	215	169
Currency in Circulation (millions)[3]	$29,904	$29,735	$30,152
Dept. Store Sales (changes from year ago)[3]	+3%	+4%	+12%
FINANCE			
Bank Clearings (Dun & Bradstreet, millions)	$19,503	$20,715	$18,554
Federal Gross Debt (billions)	$270.5	$271.2	$266.2
Bond Volume, NYSE (millions)	$21.3	$18.8	$13.1
Stocks Sales, NYSE (thousands of shares)	10,267	10,324	4,386
Loans and Investments (billions)[4]	$80.7	$81.7	$76.1
U. S. Gov't. Obligations Held (billions)[4]	$33.4	$34.1	$29.2
PRICES			
STEEL's Finished Steel Price Index[5]	189.75	189.75	189.18
STEEL's Nonferrous Metal Price Index[6]	215.7	214.8	209.6
All Commodities[7]	110.0	109.9	109.4
Commodities Other Than Farm & Foods[7]	114.4	114.4	114.1

*Dates on request. [1]Preliminary. [2]Weekly capacities, net tons: 1954, 2,384,549. 1953, 2,254,459. [3]Federal Reserve Board. [4]Member banks, Federal Reserve System. [5]1935-1939=100. [6]1936-1939=100. [7]Bureau of Labor Statistics Index, 1947-1949=100.

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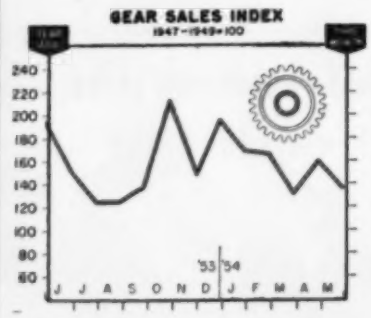
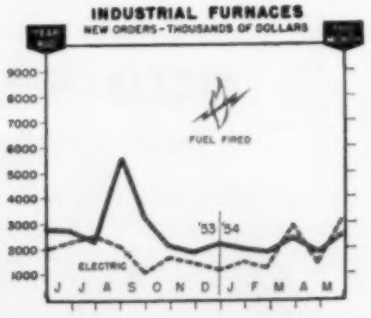




	1954	1953	1952
Jan.	167.4	161.4	670.6*
Feb.	165.1	183.1	539.5*
Mar.	128.6	158.9	517.1*
Apr.	156.2	217.1	478.7*
May	134.3	199.8	425.9*
June	....	146.5	452.3*
July	....	120.7	145.3
Aug.	....	121.6	132.3
Sept.	....	135.6	143.4
Oct.	....	211.1	160.8
Nov.	....	144.9	150.9
Dec.	....	194.0	140.9

* (1935-1939=100)
American Gear Mfrs. Assn.

New Orders—Thousands of Dollars

	Fuel Fired*		Electric	
	1954	1953	1954	1953
Jan.	1,865	3,540	1,374	1,655
Feb.	1,758	3,996	1,093	1,672
Mar.	2,346	3,607	2,525	1,301
Apr.	1,734	3,017	1,263	1,796
May	2,423	2,609	3,065	1,799
June	....	2,550	....	2,095
July	....	2,017	....	2,246
Aug.	....	5,465	....	1,904
Sept.	....	3,019	....	873
Oct.	....	1,975	....	1,539
Nov.	....	1,692	....	1,256
Dec.	....	2,013	....	1,014

* Except for hot rolling steel.
Industrial Furnace Mfrs. Assn.

Charts copyright 1954 STEEL.

was going on, the index rose. Now it will settle back a bit while the automakers adjust their production schedules to allow dealers to work off high inventories. With a 550,000-unit sales peak possible for June, according to *Ward's Automotive Reports*, July looks better than previous planning had it. New-car inventories may soon dip below the 600,000 level for the first time since December, and the figure may be 500,000 by new-model time.

Cause and Effect . . .

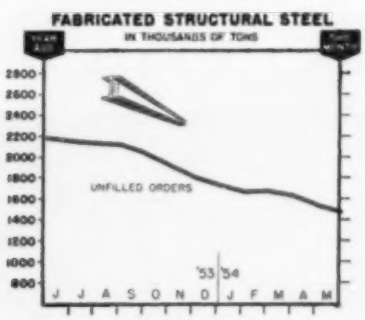
Electric power and revenue freight car loadings, which have been advancing steadily for some time, continue their ways during the latest periods. Edison Electric Institute reports the week ended June 26 saw the second highest output of the year with 8981 million kilowatt-hours. Not since mid-January has distribution been that high. Carloadings for the same week advanced to 713,160 cars, 0.8 per cent above the previous week. Both of these elements, plus increased return boat loads of coal to upper Great Lakes ports, may account for the increase in bituminous coal production recently. During the week ended June 5, daily production was 1,077,000 tons. Four weeks later, it was 1,375,000 tons daily, the highest point since the first week in February.

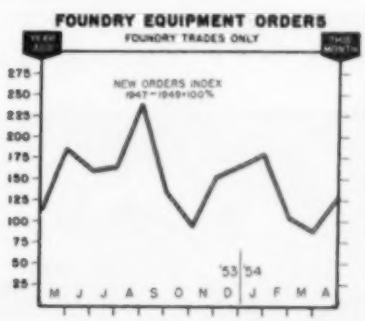
Anticlimax in Railroads . . .

At a time when most persons thought the modernization program of the railroads was over, Boston & Maine Railroad has come up with plans to purchase a fleet of 55 self-propelled, stainless steel, air-conditioned cars and 12 diesel locomotives. Budd Co. will make the cars, but the locomotive order is still open. In the meantime, Electro-Motive Division of General Motors Corp. is closing most of its operations during July because of lack of business.

Roadbuilding Gets Boost . . .

The government has taken another step to bolster the economy with the advanced apportionment of $875 million to states for highway construction. The immediate effect, says Commerce Secretary Weeks, will be the letting by states within the next 90 days of an additional $100 million in con-





	Thousands of Net Tons			
	Shipments		Backlogs	
	1954	1953	1954	1953
Jan.	245.6	241.4	1,686	2,180
Feb.	253.1	251.1	1,697	2,128
Mar.	285.4	266.3	1,645	2,155
Apr.	293.5	263.2	1,566	2,168
May	254.1	263.8	1,490	2,179
June	....	274.6	....	2,153
July	....	230.3	....	2,134
Aug.	....	251.1	....	2,122
Sept.	....	255.6	....	2,041
Oct.	....	295.5	....	1,927
Nov.	....	257.8	....	1,804
Dec.	....	266.9	....	1,741
Total	....	3,117.6		

American Institute of Steel Construction.

	Index (1947-1949=100)		Value Thousands	
	1954	1953	1954	1953
Jan.	173.8	99.6	$2,463	$1,418
Feb.	99.9	97.5	1,423	1,388
Mar.	82.7	132.2	1,069	1,882
Apr.	125.3	111.8	1,776	1,592
May	....	182.1	....	2,594
June	....	156.4	....	2,227
July	....	158.9	....	2,263
Aug.	....	235.5	....	3,353
Sept.	....	127.7	....	1,818
Oct.	....	87.1	....	1,241
Nov.	....	149.4	....	2,128
Dec.	....	160.8	....	2,290

Foundry Equipment Mfrs. Assn.

tracts above the contracting previously planned. That's only about half of the amount that eventually will be apportioned. American Institute of Steel Construction report for May indicates that construction is doing all right on its own. May bookings again topped the 200,000-ton level for the second time this year, while shipments of 254,098 tons marked the twenty-second consecutive month the figure has gone over the 200,000-ton level.

Inventories Still Adjusting . . .

More encouragement comes from Washington with the report of the Commerce department that manufacturers' inventories at the end of May were below the year-ago level for the first time since the outbreak of the Korean war. Inventories were valued at $45 billion, about $400 million beneath the month previous. Commerce department does not think the inventory liquidation is over, however. Nor does it think the big rush of new orders is on.

Steelworkers' Wages Up . . .

Figures on wages in the steel industry are due for a reshuffling soon as a result of the recent contract settlements, but even without the increase obtained at that time the steelworker did all right on an hourly basis during May. American Iron & Steel Institute reports the average hourly payroll for wage earners in the industry was $2.314, the highest figure so far this year. Including pensions, social security and insurance, the cost in May would be about $2.49 an hour. The rub comes in the number of hours worked. The average fell to 34.9 hours in May against 35.8 in April.

Loosening the Purse Strings . . .

From the consumers' viewpoint, things must be looking up lately. While they saved money at a high rate during first quarter, indications are that they are letting go of some of it now. Not only are retail sales coming up—3 per cent above year-ago for the week ended June 26—but installment credit buying also increased during May for the second straight month. The $3.3-billion liquid savings which the Securities & Exchange Commission says individuals accumulated during first quarter may help turn business upward.

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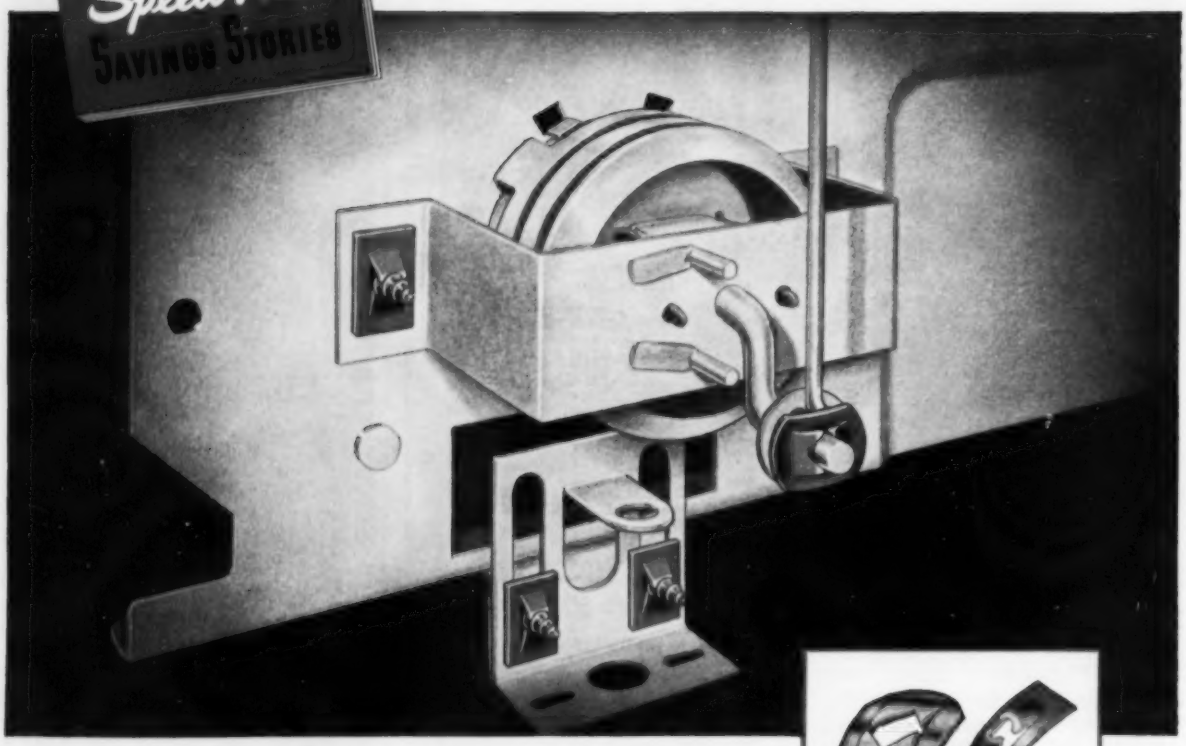

Chrysler Airtemp enjoys "refreshing" 40% cost saving!

New Casement Window Air Conditioner assembled at lower cost with 27 SPEED NUTS

Engineers of Chrysler's Airtemp Division, Dayton, Ohio, accepted many of the cost-saving recommendations in a Tinnerman Fastening Analysis Survey on their new Room Air Conditioner for casement windows. This led to the selection of 11 different types of SPEED NUTS to make a total of 27 attachments. The result: an estimated 40% saving in assembly costs over alternate fastening methods!

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William E. Ward was elected president and general manager, **Russell, Burdsall & Ward Bolt & Nut Co.**, Port Chester, N. Y. He succeeds **Evans Ward**, now chairman of the board and chief executive officer. **Samuel N. Comly** fills a new position of executive vice president. **John B. Gates** was made treasurer.

Dr. Harry Walker was made vice president of **Norma - Hoffmann Bearings Corp.**, Stamford, Conn., in charge of the newly formed Walker Division which engages in manufacture and sale of selenium and other types of dry disc rectifiers.

At **Timken Roller Bearing Co.'s** steel and tube division, Canton, O., **Ralph T. Shipley** was promoted to assistant superintendent, steel plant, and **Burke Denison** was made general foreman, Gambrinus, O., steel plant No. 2.

Charles J. Blair succeeds **Harry B. Matzen** as assistant superintendent of the Massillon, O., plant of Republic Steel Corp.'s **Union Drawn Steel Division. Ralph V. Darragh** replaces Mr. Blair as division industrial engineer at Massillon where he supervises industrial engineering activities at Union Drawn plants at Massillon, Beaver Falls, Pa., East Hartford, Conn., Gary, Ind., Los Angeles and at a Canadian subsidiary at Hamilton, Ont.

DALE B. KENNEDY
. . . plant mgr., Electricweld Tube Div.

Jones & Laughlin Steel Corp. appointed **Dale B. Kennedy** plant manager at its Electricweld Tube Division at Oil City, Pa. He is replaced as general plant foreman by **William Roesch.** These changes follow the death of **H. W. Maskrey** who was general manager.

Robert O. Dehlendorf was made assistant general sales manager, electric motor division, **A. O. Smith Corp.** He has headquarters at the Dayton, O., divisional office. **F. A. Gruetjen** was appointed to the staff of L. B. Smith, president, with the title of director of aeronautical development. **Richard H. Heilman** succeeds the late **A. H. Zastrow** as general traffic manager.

Charles H. Crawford joined **Colonial Broach Co.**, Detroit, as plant manager. He has served Mack Truck Co. for 34 years, his most recent position being plant manager at New Brunswick, N. J.

Glenn Koger was appointed manager of **Rome Cable Corp.'s** Torrance, Calif., plant. **Gilbert Woodill**, acting manager for several months, was recently elected assistant treasurer of the company.

R. R. Hogan was made manager and **C. L. Griffith** assistant manager of the southern district sales office of **Kaiser Steel Corp.** They have headquarters in Los Angeles.

J. S. ROLLER
. . . Firth Sterling gen. sales mgr.

J. S. Roller moves from assistant general sales manager to general sales manager of **Firth Sterling Inc.**, Pittsburgh.

Carroll L. Wilson was elected vice president and general manager of **Metals & Controls Corp.**, Attleboro, Mass. For the last three years he has been a member of the board. He formerly served as director of industrial development of Climax Molybdenum Co. From its inception in 1947 until 1950 he served the Atomic Energy Commission as general manager.

Revere Copper & Brass Inc., New York, placed **Raymond P. Winberg**, vice president-general sales manager, in charge of the sale of Revere mill products including copper, copper-base alloys and aluminum. **John H. Feldmann** was made sales manager, industrial sales of copper and brass products; **Stanley H. Wilson** sales manager, aluminum products; and **Harold C. Wilson** manager of aluminum sales relations and placed in charge of aluminum raw materials acquisition.

Dr. Augustus B. Kinzel was appointed director of research, **Union Carbide & Carbon Corp.**, New York.

Harold E. Lewis joined the sales staff of **Parker Appliance Co.**, Cleveland, to head its hydraulics

R. S. POISTER

C. I. BRADFORD

. . . chairman and president of Rem-Cru Titanium

training program both in the field and at the main plant.

R. S. Poister becomes chairman and **C. I. Bradford** president and a director of **Rem-Cru Titanium Inc.**, Pittsburgh. Retiring president and director is **Walter U. Reisinger. William H. Colvin** resigns as chairman and a director. His retirement from active business became known last month when he resigned as president of Crucible Steel Co. of America where Mr. Poister has served as vice president. Mr. Bradford has been vice president and director of Rem-Cru operations.

Four Wheel Drive Auto Co., Clintonville, Wis., promoted **James A. Driessen** from administrative to executive vice president. **G. F. DeCoursin** was made vice president in charge of sales and **P. A. Larino** vice president-manufacturing.

Eaton Mfg. Co., stamping division, Cleveland, appointed **D. R. Burton** stamping sales manager and **D. F. Brawn** manager, cap department. Mr. Burton's headquarters are at Detroit, Mr. Brawn's at Cleveland.

Ralph A. Patterson was promoted from general sales manager to vice president, **Bell & Gossett Co.**, Morton Grove, Ill. He soon transfers to New York to establish a new office.

Charles J. McCarthy was elected chairman of **Chance Vought Aircraft Inc.**, Dallas, now a subsidiary of United Aircraft Corp. He formerly was a vice president of the parent company.

Victor A. Olson was appointed manager of **AirSupply Co.**, Beverly Hills, Calif., a division of Garrett Corp.

Bay City Shovels Inc., Bay City, Mich., elected **Donald E. Hawkins** president to succeed **Morgan Ramsay**, retired. Mr. Hawkins continues as treasurer but is replaced as secretary by **Morgan Ramsay Jr.**

Hagan Corp., Pittsburgh, appointed **William F. Waina** manager of sales, aeronautical and special products, and **Gerald G. Lipke** manager of sales, standard products. **John E. Duesing** was made sales manager, Pittsburgh district office.

E. Leo Curry was made sales manager of **Ederer Engineering Co.**, Seattle. He heads sales activity of the firm with particular attention to industrial crane sales.

Edgar A. Burt was appointed chief engineer of **Orr & Sembower Inc.**, Reading, Pa. He previously was with Westinghouse Electric Corp.

Daniel P. Lacock is now southeastern regional sales manager for **Federal Electric Products Co.** and its subsidiary, Pacific Electric Mfg. Corp., located in Atlanta. He formerly was with Kuhlman Electric Co.

Richard J. McGinn was named manager of **Stud Welding Co. Inc.** with headquarters at Houston. For three years he has served as a field manager for Nelson Stud Welding Division, Gregory Industries Inc., in the Philadelphia territory.

William T. Cherry was made manager of application engineering, **Formsprag Co.**, Van Dyke, Mich. Formerly with the company's production, engineering and sales departments, he is replaced by **Robert B. Madonia.**

Charles W. Diven Jr. was named Philadelphia district sales manager for **Sharon Steel Corp.** to suc-

WILLIAM F. WAINA

GERALD G. LIPKE

. . . new sales managers at Hagan Corp.

PRE-TESTED TOUGHNESS FOR *Torture* DRIVES

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ATLAS ROLLER CHAIN

T. E. WATERFALL
. . . heads Chrysler Motor Parts Div.

H. E. MARTIN
. . . to join Metal & Thermit Corp.

NORMAN B. OBBARD
. . . American Bridge Div. president

ceed **S. H. Baker** who remains at Philadelphia in an advisory capacity.

T. E. Waterfall, vice president-general manager, was elected president of **Chrysler Motor Parts Division,** Chrysler Corp., Detroit, to succeed **Charles L. Jacobson** who, with **F. W. Misch,** was elected a vice president of **Chrysler Corp.** Mr. Misch is also comptroller.

George E. Klingelhofer was elected vice president and secretary of **Pittsburgh Bridge & Iron Works,** Rochester, Pa.

Phillip C. Althen heads the newly created packaging section, sales development division, **Aluminum Co. of America** at New Kensington, Pa.

James R. Allan, after 44 years service, retires as manager, industrial engineering and construction department, **International Harvester Co.,** Chicago.

H. E. Martin was elected president and a member of the board of **Metal & Thermit Corp.,** New York. He is presently manager of the New York district of Babcock & Wilcox Co. and continues in that position until August when he assumes his new position.

E. R. Sliger fills the newly created post of assistant general sales manager of **Westinghouse Electric Corp.'s** electronic tube division at Elmira, N. Y.

N. J. Connor, effective Aug. 1, will be manager of the New York district office, **Babcock & Wilcox Co.,** to replace **H. E. Martin,** resigning.

Harry A. Gordon was made sales manager of **Empire Industrial Supply Corp.,** Buffalo.

Edward T. Scott was named coach trailer sales manager, **Warner Electric Brake & Clutch Co.,** Beloit, Wis.

Norman B. Obbard is the new president of **American Bridge Division,** U. S. Steel Corp., Pittsburgh. He succeeds **Frank K. McDanel,** retired. Mr. Obbard, long with American Bridge, served as its vice president and general contracting manager since 1946.

Paul H. Taylor was elected a director and vice president in charge of the research division and new Hydra Spring Division of **Wales-Strippit Corp.,** North Tonawanda, N. Y.

Rolly W. Fitch was made manager of **Electric Auto-Lite Co.'s** battery plant division in Toledo, O., to succeed **J. A. Minch,** former vice president in charge of battery production, who resigned.

J. B. Henry Jr. was made manager of a newly created architectural division of **Allegheny Ludlum Steel Corp.** His headquarters will be at the company's general offices in Brackenridge, Pa.

OBITUARIES . . .

John O. Huse, 56, vice president and sales manager, **Chrysler Motor Parts Division,** Chrysler Corp., Detroit, died June 28.

Hugo F. Hoesterman, 72, vice president, **Kickhaefer Mfg. Co.,** Milwaukee, died June 24.

Dr. Gideon Sundback, 74, a director of **Talon Inc.,** Meadville, Pa., and president of two Talon subsidiaries in Canada and in Mexico, died June 21.

Harold S. Heller, 54, president, **Heller Co.,** Cleveland, died July 1 in California.

George H. Anderson, president, **Anderson Corp.,** Worcester, Mass., died June 19.

Charles S. Davis, 77, chairman of **Borg-Warner Corp.,** Chicago, died July 1 in Paris while on a European tour.

W. H. Brown, 69, treasurer-secretary, **R. L. Batteiger Co.,** Philadelphia, died June 24.

Daniel M. Randall, 70, former vice president-sales, **Somerville Iron Works,** Somerville, N. J., subsidiary of Johnson Bronze Co., died June 18 in Florida.

A. Vickroy Blackburn, 72, manager of the structural steel division, **Donovan Wire & Iron Co.,** Toledo, O., died June 20.

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You won't find it described in the books on metallurgy. But it's a mighty important factor here at Claymont in supplying you with carbon and alloy steel plates that are tailored to your specialized requirements.

To us it means *Very Important Plates.* It means individualized supervision of your order . . . particular attention to every detail of analysis, processing and inspection—right down the line from top to bottom.

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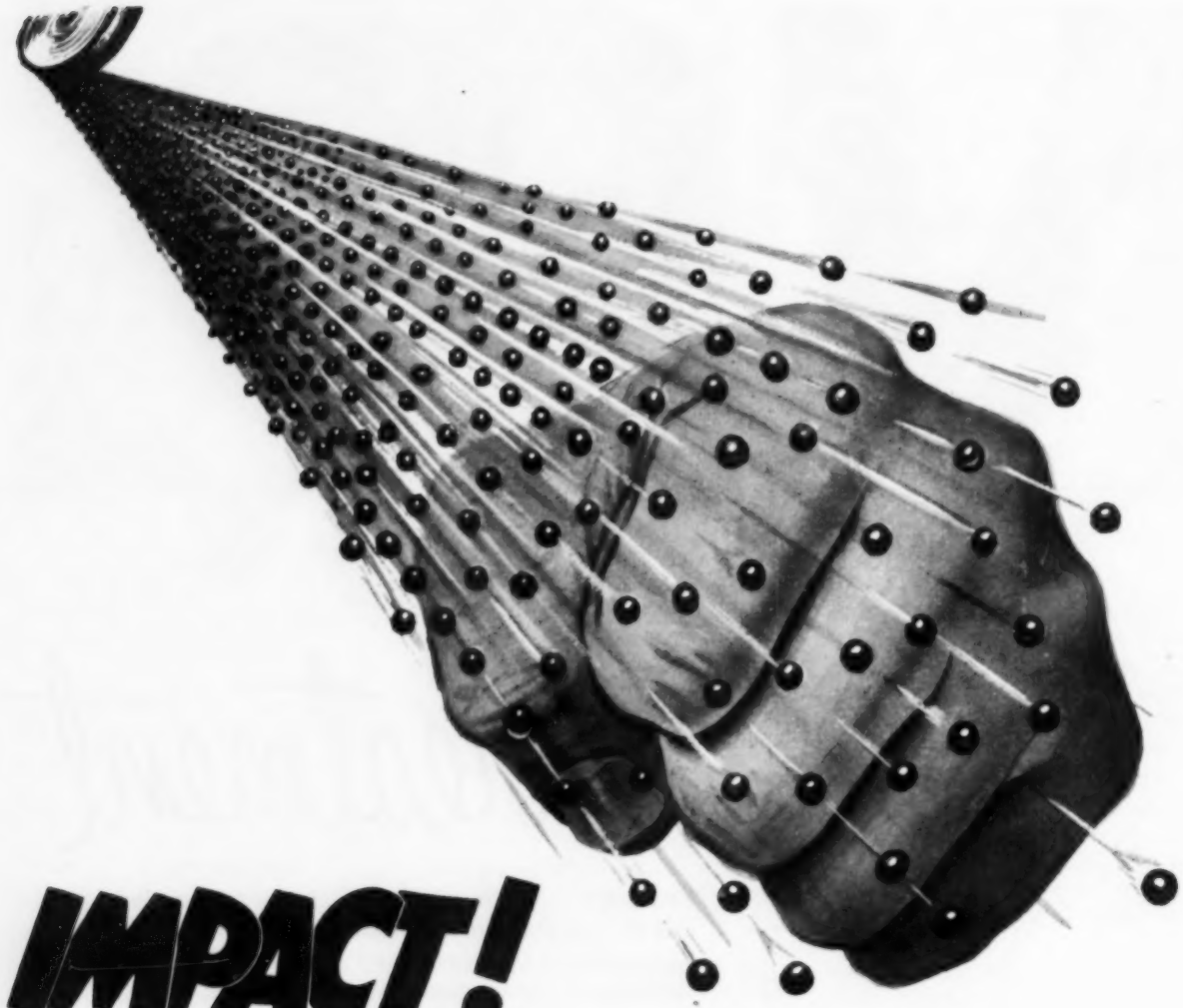

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Malleabrasive has all the toughness of malleable iron PLUS peculiar hardness characteristics provided only by our patented Malleabrasive process. This amazing combination results in fast cleaning combined with tremendous reduction in wear on machine parts.

That's why foundrymen agree that Malleabrasive is the iron fist for cleaning, but the velvet glove for machine parts wear. No "fines" here to chew machine parts to bits! Malleabrasive *wears* down . . . never shatters . . . continues punching to the end!

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World's largest manufacturers of Malleablized Shot and Grit
Established 1907

J & L Expanding Research

Enlarged staff will be housed in research center under construction in Pittsburgh

JONES & LAUGHLIN STEEL CORP., Pittsburgh, is constructing a research center on Baldwin Hill, on the south side of the city, 400 ft above the Monongahela river, overlooking the firm's Pittsburgh Works.

The research center, to cost initially more than $1.5 million, will consist of several buildings, housing a research staff of about 100. The buildings will be air conditioned and will house many of the latest research instruments.

Close Contact—The laboratory site is only 15 minutes by auto from downtown Pittsburgh. Its nearness to the Pittsburgh and Aliquippa Works will make possible continued close co-operation between the research staff and production personnel.

The research center will be a "step in the expansion and centralization of J & L research activities," says Herbert W. Graham, vice president-research.

The more theoretical aspects of J & L's research will be moved into the new location. Research at most of the existing locations will be continued—metallurgical research at the Pittsburgh Works research laboratory, coal and coke research at Aliquippa Works, and ore research at Negaunee, Mich.

Chase Brass Awards Contract

Chase Brass & Copper Co. Inc., Waterbury, Conn., a subsidiary of Kennecott Copper Corp., New York, awarded the contract for an addition to its Cleveland mill to Gillmore-Olsen Co., Cleveland. The company plans to spend some $4 million in building the new addition and in furnishing the machinery and facilities for it. The project is scheduled to be completed within seven months.

Westinghouse Awards Contract

Navarro Corp., Pittsburgh, has been named the general contractor for Westinghouse Electric Corp.'s new multimillion-dollar metals plant at Blairsville, Pa. The plant, scheduled to be completed by the end of this year, will be devoted to development, pilot production and application of special metals and alloys—serving as a link between research and commercial use of new metals. Bethlehem Steel Co., Bethlehem, Pa., will erect structural steel for the building.

Schmieg Boosts Plant Capacity

Schmieg Industries Inc., Detroit, completed an expansion program that has resulted in a 60-per-cent increase in the plant's manufacturing capacity. The firm makes dust and fume control equipment, production and finishing systems, spray booths, industrial ovens, mechanical washers, and industrial sheet metal equipment and accessories.

Republic Forms New Division

Republic Steel Corp., Cleveland, established a Hi Strength Steel Division to co-ordinate the firm's sales of high strength steels. Edward K. Waldschmidt was appointed manager of sales of the new division.

High strength steels combine properties superior to carbon steels in strength, resistance to atmospheric corrosion, abrasion and fatigue. They have good fabricating and welding qualities. These steels are used widely in making such transportation equipment as freight and passenger railroad cars, busses, trucks and trailers. They also are used in the manufacture of farm and earth-moving equipment and other products where high strength and lightweight are required at a relatively low cost.

Bosch, Arma Firms Merge

American Bosch Corp., Springfield, Mass., merged with its wholly owned subsidiary, Arma Corp., Brooklyn, N. Y., into a single company under the name of American Bosch Arma Corp. The Arma Division will produce electronic and electromechanical devices for military use; the American Bosch Division, fuel injection equipment for engines and automotive and aviation components.

Metal Parts Plant Opens

Initial production of powder metal parts at the plant of Rocky Mountain Metals Inc., Colorado Springs, Colo., a subsidiary of International Powder Metallurgy Co., Ridgway, Pa., started July 1. The

(*Please turn to page* 98)

Blaw-Knox Spreads Out for Greater Efficiency

Even before construction is completed, full scale production is under way in expanded facilities of Blaw-Knox Co.'s Power Piping & Sprinkler Division, Pittsburgh. The new bay above is one of two just added to the Beaver avenue plant. It houses a spring hanger and vibration eliminator production line

All types of INDUSTRIAL
Anaconda's 7 mills and net

BUILDING WIRE

Rubber insulated (Types R, RH, RH-RW, RW) for general purpose power and lighting.

Thermoplastic insulated (Type TW) with high resistance to moisture, corrosive fumes and chemicals.

DUTRAX* Type NM nonmetallic-sheathed cable for open or concealed wiring.

DURALL-T† Type UF and NMC cable for open or concealed wiring, inside or outside masonry block or tile walls, or underground feeder, subject to moisture, fumes, etc.

POWER CABLE

Interlocked Armor—quick, easy, inexpensive to install. Easily relocated. Light, flexible.

DURASHEATH† all-purpose neoprene-jacketed cable can be run in the ground, in ducts, overhead in one *continuous run* without splices. Durasheath is also widely used as building wire.

DENSHEATH* for general power uses. PVC insulated. Resistant to flame, moisture, chemicals.

Varnished-cambric insulated for power, lighting and control uses.

Paper-lead for power in moderate and large blocks. 69,000 volts maximum rating.

CONTROL CABLE

Supplied with PVC (DENSHEATH), polyethylene, rubber, and varnished-cambric insulation.

BUS DROP CABLE

POWERDUCT flexible cable increases use and mobility of machines; Underwriters' approved with rubber insulation and loom cover. Can be furnished with PVC jacket, flame-, moisture- and chemical-resistant.

PORTABLE CORDS

SECURITYFLEX† cord, 2/c to 6/c with special stranding and tough neoprene jacket. Takes abuse, won't kink, flexes indefinitely.

MACHINE TOOL WIRE

DENSHEATH PVC insulation, stranded conductors — flexible, easily worked, and will stand up against oils, greases, cutting compounds, abrasion.

SWITCHBOARD CABLE

Solid conductor with super-aging DENSHEATH PVC insulation.

MAGNET WIRE

Anaconda produces a complete line of magnet wire . . . all types, sizes and shapes. Round, square, rectangular. CLASS A: *Formvar, Enamel, Nyform, Nylon.* CLASS B: *Vitrotex*, Silicone.* CLASS H: *Silotex*.*

*Reg. U. S. Pat. Off. †Trade Mark 54398

For more information call your nearest Anaconda Sales Office. *Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.*

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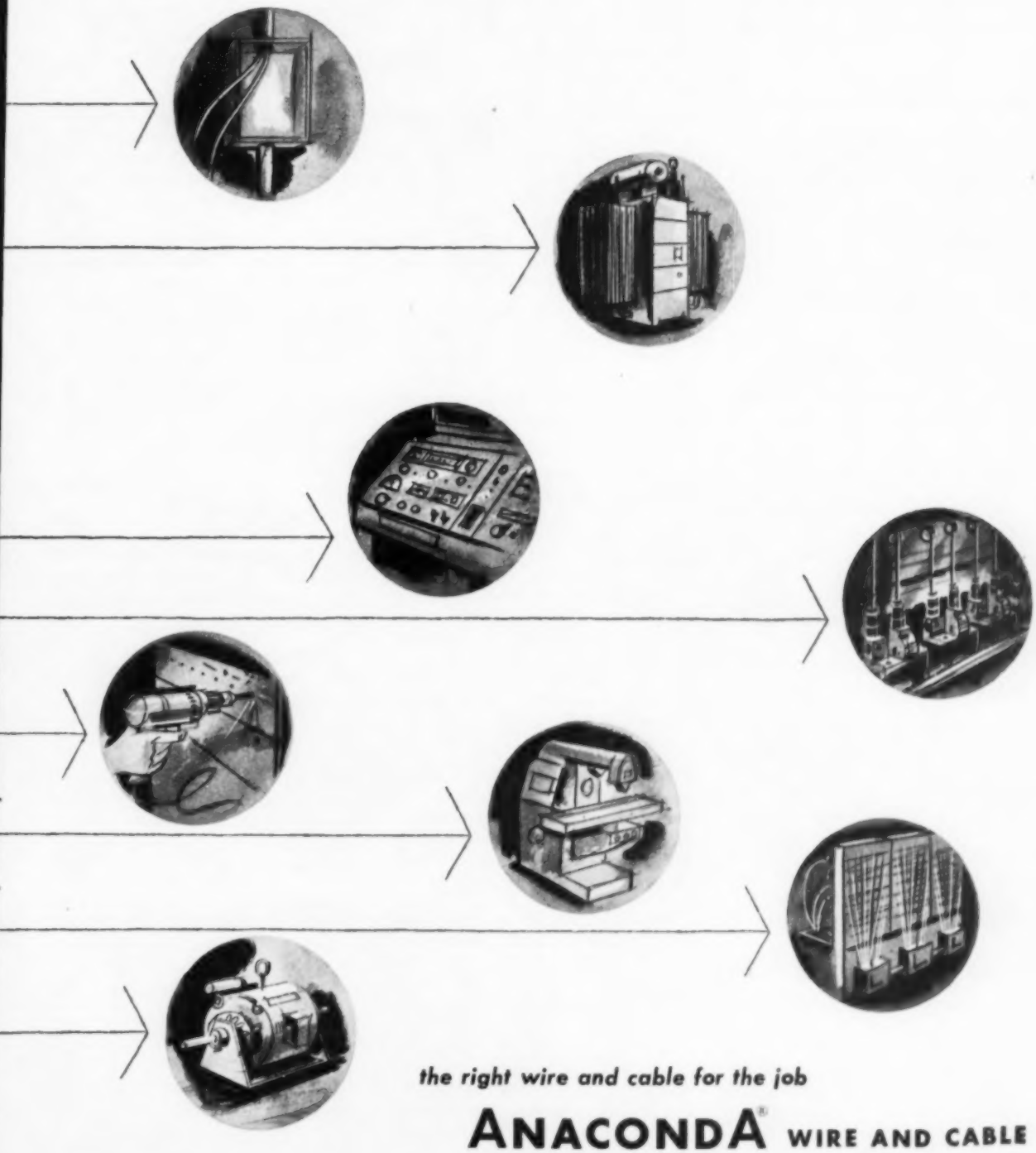

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ANACONDA® WIRE AND CABLE

(*Continued from page* 95)

plant building provides adequate facilities to produce 100,000 parts per day and is geared to produce component parts for military, industrial and consumer products. Initial production consists of bushings and bearings for small motors, powdered metal structural parts for automotive and allied industries. P. Phillips is in charge of production; G. Essendrop, office manager and head of the sales department.

Newton Co. Buys Equipment

Newton Co., Manchester, Conn., purchased the machinery and equipment of American Tool Works, Hartford, Conn., and will move these facilities to its plant in Manchester.

Dow Opens Cincinnati Office

Dow Chemical Co., Midland, Mich., opened a field office at 2330 Victory Parkway, Cincinnati, under the direction of Fielding H. Yost Jr.

Maine Tool Works Expands

Portland Machine Tool Works Inc., South Portland, Me., is installing facilities to produce metal parts by formspinning and shearforming. The company builds machine tools and industrial equipment.

Sale of Foundry Proposed

Stockholders of Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa., will vote Aug. 9 on a proposal to sell to Frederick W. Richmond of New York virtually all the assets of the company for $3,970,000. The business location and personnel of the company would be continued by the purchaser.

Foundry Halts Operations

Lancaster Malleable & Steel Corp., Lancaster, N. Y., discontinued operations in its foundry. Stockholders will decide on the disposal or liquidation of the business which has been conducted since the turn of the century.

REPRESENTATIVES

Union Steel Products Co., Albion, Mich., appointed Jack Mahaffey Equipment Co., Pittsburgh, as western Pennsylvania sales representative for the company's materials handling line.

The firm of **Davis-McCormick & Co.**, 132 Nassau St., New York, was organized to act as sales agents and consultants of fasteners. The firm represents Southington Hardware Mfg. Co., Southington, Conn., and Pawtucket Screw Co., Pawtucket, R. I.

Ready Tool Co., Bridgeport, Conn., appointed Littlejohn Co., Los Angeles, as its representative for Southern California, Arizona and southern Nevada.

Reid Bros. Co. Inc., Beverly, Mass., manufacturer of surface grinders, appointed Fuchs Machinery & Supply Co., Omaha, Nebr., and Gross Machinery Co. Ltd., Toronto, Ont., as distributors of its products.

Brass & Copper Supply Co. Inc., Baltimore, was named a distributor of beryllium copper strip and rod by **Beryllium Corp.**, Reading, Pa.

General Electric Co.'s Carboloy Department, Detroit, appointed Industrial Tool & Supply Co., San Jose, Calif., as a distributor of its line of standard cemented carbide tools and blanks, carbide-tipped masonry drills and diamond wheel dressers.

Adamas Carbide Corp., Kenilworth, N. J., manufacturer of standard carbide tools, tool tips, dies and wear parts, appointed Production Tooling Service, Birmingham, as a sales representative.

Dynamic Industrial Products Inc., Danbury, Conn., producer of a safety coolant, appointed the following as its representatives: S. W. Anderson Co., Forest Park, Ill.; Beemer Engineering Co., Buffalo, Syracuse, Rochester, N. Y., and Philadelphia; Prentiss Cleaves, San Diego, Calif.; H. D. Geisler Co., Dayton, O.; Walter J. Greenleaf Co., Pittsburgh; Hodgson- Geisler Products Co., Detroit; S. Imrishak, Bridgeport, Conn.; Industrial Abrasive & Supply Co., Cleveland; R. H. Johnson, Seattle; M. H. Miller Co., Salt Lake City, Utah; Aviation Service Supply Co., Denver; A. N. Nelson Co., Kearny, N. J.; Premmco Inc., Los Angeles; and Russell E. Smith, Needham, Mass.

American Research Corp., Bristol, Conn., maker of environmental test equipment, appointed Maurice I. Parisier & Co., New York, as its export representative.

Protective Coatings Division, Pittsburgh Coke & Chemical Co., Pittsburgh, appointed Murray P. Ellis of Atlanta as its southeastern territory sales representative.

Albion Industries Inc., Albion, Mich., named Factory Trucking Equipment Co., St. Louis, as a distributor of the firm's line of industrial casters and wheels.

Worthington Corp., Harrison, N. J., appointed the following as distributors for its welding positioners and power and idler turning rolls: Jackson Welding Supply Co., Rochester, N. Y.; Weldery Supply Co., Jamestown, N. Y.; Mills Welding Supply Co., Buffalo; Maine Oxy-Acetylene Supply Co., Auburn, Me.; Smith Courtney Co., Richmond, Va.; Gulf Welding Co., New Orleans; Delta Oxygen Co., Memphis, Tenn.

American MonoRail Co., Cleveland, appointed Engineered Industrial Equipment Co., Buffalo, as one of its distributors.

De Laval Steam Turbine Co., Trenton, N. J., appointed Maquinaria Industrial Ltda., Bogota, Colombia, as its exclusive representative for its products in that trading area.

Gar Wood Industries Inc.'s Findlay Division, Findlay, O., appointed Equipment Inc., Jackson, Miss., as a dealer for its Buckeye ditchers, spreaders and finegraders.

Flexaust Co., New York, appointed Smallcomb Electric Co., Los Angeles, as distributor of its line of flexible ducts.

(*Please turn to page* 101)

Why accept frequent furnace repairs and production losses as "routine"? Today, there's one . . .

Sure way to avoid shutdowns

WHAT CAUSES MOST REFRACTORY FAILURES? Usually one small area is at fault. A spot that had to take more abuse than the rest of the furnace . . . and couldn't. Couldn't because it was made of the same refractories as the rest of the furnace. Couldn't because it was not protected by materials *specifically designed* to resist corrosion . . . or flame impingement . . . or erosion . . . or extreme heat . . . or whatever combined conditions caused the localized failure.

That's where CARBORUNDUM's super refractories fit in. These products are "custom designed" to do what's above-and-beyond other refractories. They are the "armor plate" agents, designed to make emergency furnace breakdowns a rarity.

THEY ARE ALSO ENTIRELY DIFFERENT. Some of their properties have no inherent connection with ordinary refractories. For example, the diamond-like hardness of silicon carbide, which gives it superior wear resistance. Or the corrosion resistance of electric furnace mullite. Or the chemical stability of aluminum oxide.

They're also very different, one from another. Some conduct heat very rapidly. Others insulate. Some are made of bonded grain, others of bubbles or hollow spheres bonded together. Still others are cast, like metals, into an impervious, ivory-like structure. But all are inherently strong, resistant to extreme heat, and highly durable. And each, in its place, can pretty much eliminate emergency shutdowns, and extend on-line time.

WE'D LIKE TO WORK WITH YOU toward this end. Our engineers know what materials to apply—and where. For theirs is the experience of the world's largest supplier of super refractories. As a starter, send the coupon.

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ADJUSTABILITY
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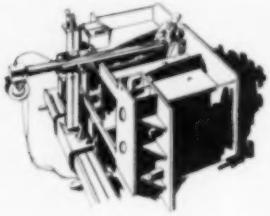

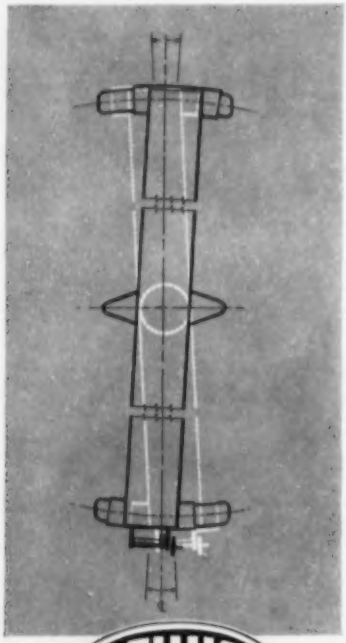

Complete portability . . . simultaneous 3-directional travel . . . and an adjustable base are the exclusive features of this new low-cost unit.

The LEWIS Automatic Welding Fixture can be readily moved to any location in your plant. Set-up time for precise positioning of large weldments is reduced 60% or more through utilization of the adjustable base mechanism.

This unit has 18-feet of longitudinal travel and 10-feet of transverse travel, with 9-feet of clearance under the boom. In addition, any standard head for welding, flame cutting or hardening can be installed.

For assured versatility in production . . . specify the new LEWIS Universal Welding Fixture.

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LEWIS

WE BUILD SPECIAL MACHINERY TO YOUR SPECIFICATIONS

ASSOCIATIONS

(*Continued from page* 98)

American Management Association, New York, elected ten new directors to serve for the 1954-1957 term, including Alden G. Roach, president, Columbia-Geneva Steel Division, U. S. Steel Corp., San Francisco; Walter G. Koch, president, International Steel Co., Evansville, Ind.; Endicott R. Lovell, president, Calumet & Hecla Inc., Chicago; J. L. Atwood, president, North American Aviation Inc., Los Angeles; Charles H. Percy, president, Bell & Howell Co., Chicago. Officers who were re-elected include chairman of the executive committee, Don G. Mitchell, Sylvania Electric Products Inc.; president, Lawrence A. Appley; administrative vice president and secretary, James O. Rice. The last two are full-time staff positions.

K. E. Walter, president, Alliance Drop Forging Co., Alliance, O., was elected president of **Drop Forging Association,** Cleveland. Charles W. Stone, vice president of Interstate Drop Forge Co., Milwaukee, was elected vice president. Members of the board of directors are E. J. Carlson, Indiana Forge & Machine Co., East Chicago, Ind.; Eugene Seagrave, Wilcox, Crittenden & Co. Inc., Middletown, Conn.; J. H. Siebert, Michigan Forging Co., Dearborn, Mich.; C. H. Smith Jr., Steel Improvement & Forge Co., Cleveland; W. H. Stocking, Pittsburgh Forgings Co., Coraopolis, Pa.

American Society of Tool Engineers, Detroit, chartered new chapters in Kalamazoo and Battle Creek, Mich., and Southeastern Massachusetts. Charter chairmen are, respectively, C. A. Elzinga, Industrial Sales & Engineering Co.; C. F. B. Koons, Oliver Corp.; and John H. Somers, Laird De Vou Inc., Cambridge, Mass.

Western manufacturers of parts from powdered metals organized an association known as **West Coast Powdered Metal Parts Fabricators.** Charter members, all in

(*Please turn to page* 104)

LOOK TO DETREX FOR

When you use Perm-A-Clor for your degreasing operations, you know why Detrex has become industry's largest direct supplier of trichlorethylene. The reason is very simple—you get more for your money!

To begin with, Perm-A-Clor is premium grade solvent. Through Detrex' modern producing facilities and improved techniques, it costs no more than ordinary solvent.

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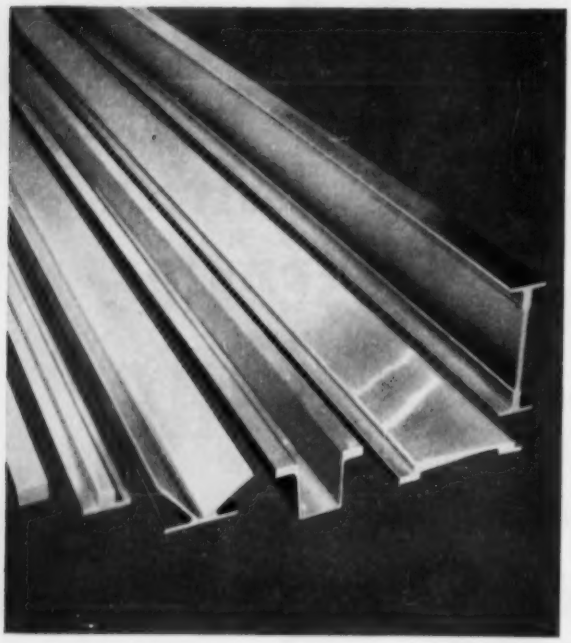

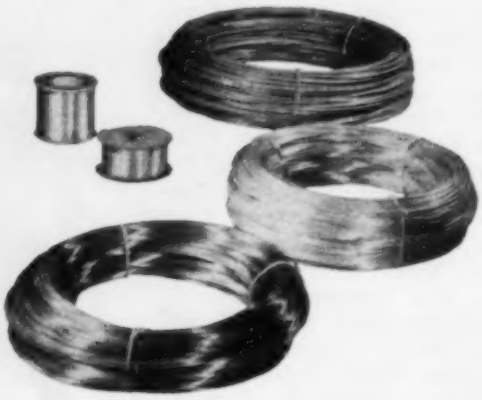

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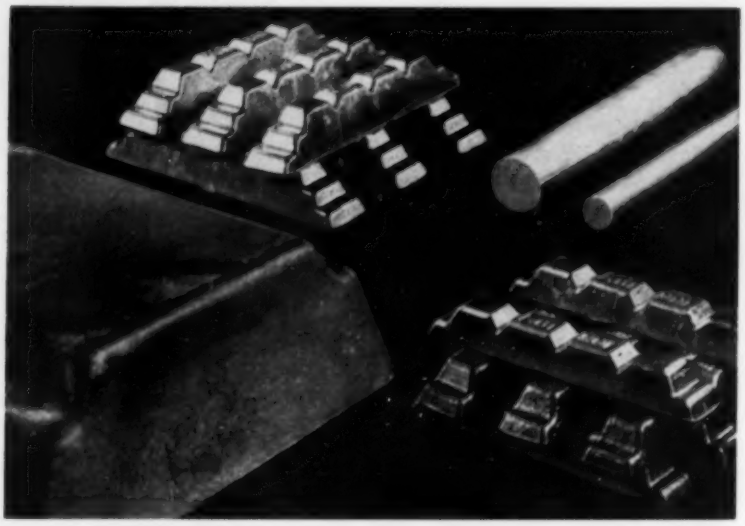

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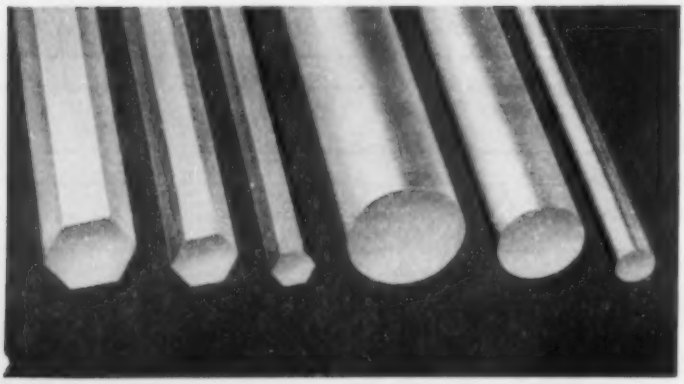
Kaiser Aluminum produces Pig, Ingot and Extrusion Billets in a range of alloys and sizes to meet your specific requirements.



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Available in a wide range of alloys in rolled and cold finished rod and bar, round and hexagonal standard screw machine stock, hexagonal bar, redraw rod, rivet rod and round forging stock.

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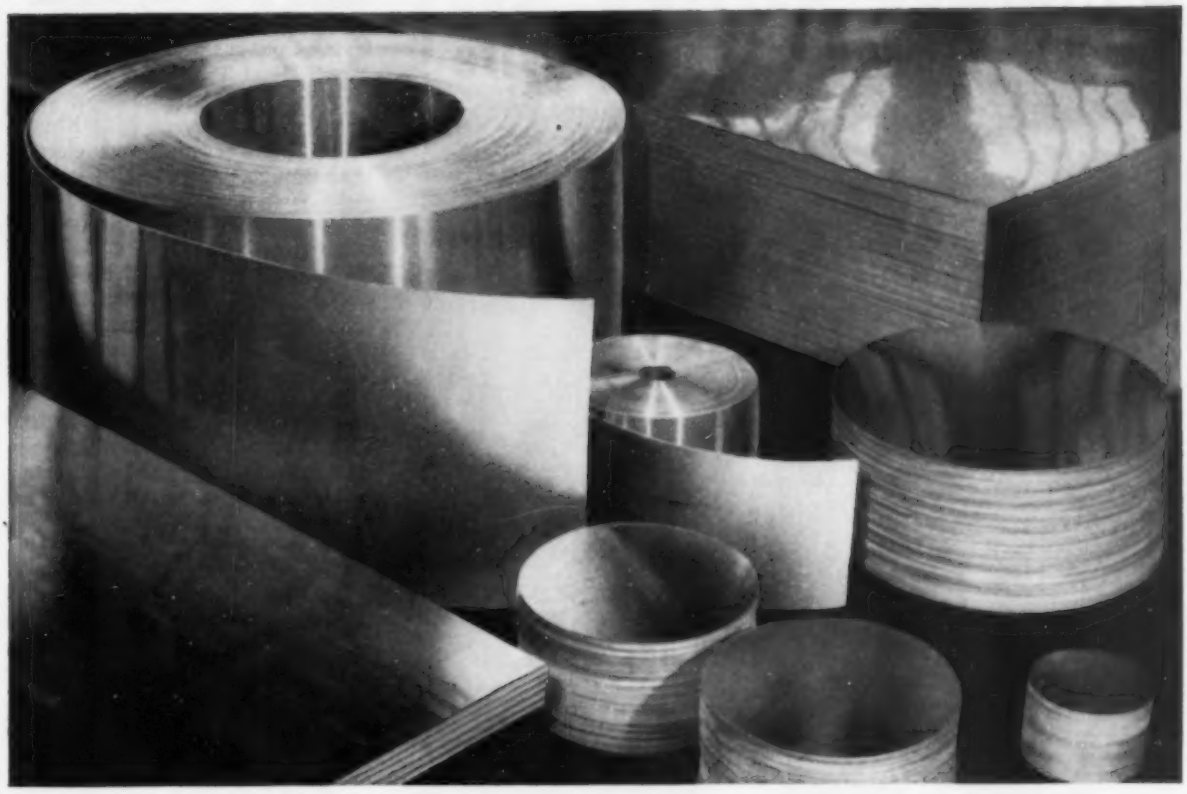

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We believe we are ideally equipped to work with you, because serving manufacturers with basic aluminum is our primary business.

In recent years, our services have been expanded in order to keep pace with our greatly increased production capacity—which today stands at close to 30% of all the primary aluminum made in this country.

We have vastly expanded our national warehousing system, our distributor program, and our staff of metallurgists and field engineers.

We believe that the kind of service we offer—combined with the unsurpassed quality of Kaiser Aluminum—should be of particular interest to all aluminum fabricators in these days of stiffer competition.

For complete information, call or write any Kaiser Aluminum sales office or one of our many distributors, located in principal cities. See our catalog in Sweet's Product Design File or write for copy. Kaiser Aluminum & Chemical Sales, Inc., *General Sales Office*, Palmolive Bldg., Chicago 11, Illinois. *Executive Office*, Kaiser Bldg., Oakland 12, California.

Other Kaiser Aluminum products include: Industrial Foil, and electrical conductor. Kaiser Aluminum also supplies household, freezer and broiler foil for home uses. Shade Screening for the building industry. Roofing and Siding sheet for farm and industrial buildings.

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plus Welding Electrodes Wires Rods

(*Continued from page* 101)

California, are Asco Sintering Co. and Permanent Filter Corp., Los Angeles; Bronze Alloy Inc., Maywood; Ceromet Inc., Monrovia; Irving Donahue and Kwikset Powdered Metal Products, Anaheim; Micrometals, Sierra Madre; and Picco Inc., Pasadena. R. H. Khuen of Asco Sintering was elected chairman.

American Society of Mechanical Engineers, New York, made Carroll R. Alden of Ex-Cell-O Corp., Detroit, a fellow of the society. This honor is conferred on men whose contributions in engineering have been outstanding.

Robert W. Nelson, American Air Filter Co. Inc., Louisville, was elected president and a director of **National Association of Fan Manufacturers,** Detroit.

George W. Mason, president, American Motors Corp., was re-elected president of the **Automobile Manufacturers Association,** Detroit. He has served as the association's president for seven consecutive one-year terms. Also re-elected are H. S. Vance, president of Studebaker Corp., and E. J. Bush, president of Diamond T Motor Car Co., vice presidents; H. H. Curtis, president of General Motors Corp., secretary; J. J. Nance, president of Packard Motor Car Co., treasurer; Alfred Reeves, advisory vice president; and W. J. Cronin, managing director.

NEW ADDRESSES

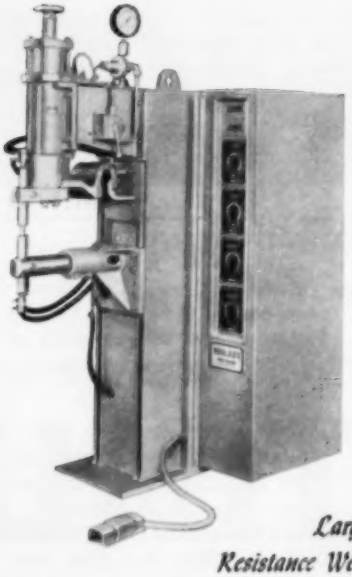
Omer E. Robbins Co. moved into its new plant and office at 24800 Plymouth Road, Detroit.

Samuel M. Langston Co., Camden, N. J., moved its parts department into larger quarters. It occupies part of a bulding formerly used by Mack Truck Co. Inc. and was one of the first to take new space in the present million-dollar expansion program at the main Langston plant.

Kaiser Aluminum & Chemical Sales Inc., Oakland, Calif., moved its Cincinnati district sales office

FOR THE FIRST TIME A COMPLETELY NEW DESIGN OF SMALL, LOW PRICE SCIAKY WELDERS

Featuring all the Ruggedness, Dependability and Consistency of Operation Common to Sciaky Basic Thinking—Welders Designed to Do More Useful Work at Lower Operating Cost with Maximum Reliability!



SP-1 AIR OPERATED, PRESS TYPE, LOW IMPEDANCE, SINGLE PHASE SPOT WELDER

Through advanced design, mass production tooling, and complete use of integrated parts, Sciaky is introducing a complete new line of competitively priced, small, standard spot and projection welders. Check these important design features . . .

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For complete details and specifications on the SP 1 spotwelder, or EP 1 projection welder, write for Bulletin 324-2.

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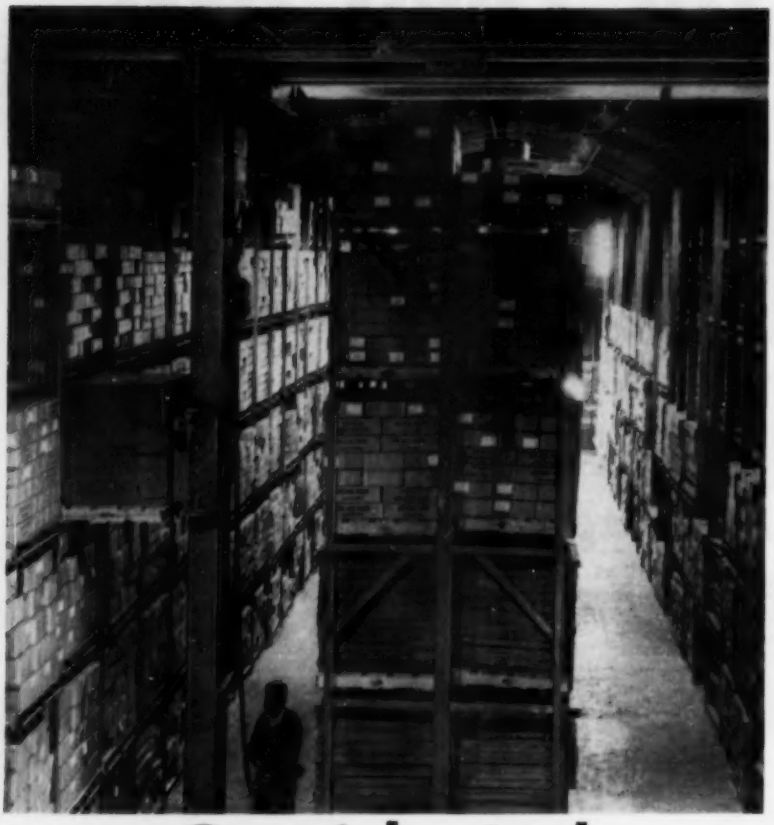

Oneida Ltd.

- stores 40" x 48" pallets 23 ft. high—within inches of the top of the trusses—
- has 100% selectivity in placement and removal with 1-man pendant push-button control.

CHICAGO TRAMRAIL TRAK-RAK STORAGE SYSTEM

secured these space-saving, time-saving advantages for Oneida Ltd. with a 3,000 lb. capacity self-contained TRAK-RAK crane operating as a top-running crane on rails mounted directly on top of the racks.

Material is delivered to either end of a storage hut by fork truck or other means. The TRAK-RAK then places it in preselected racks on either side of the aisle and stacks the material up to a height of 23 ft. which is considerably higher than by any other means.

The Oneida Ltd. installation in the storage hut did not permit any overhead handling equipment without additional structural steel to support the crane, and the TRAK-RAK Storage System was made without any alterations to the building whatsoever.

Like all TRAK-RAK installations, the crane permits movement in eight directions —up, down, to both sides; and rotates a full 360° clockwise and counter-clockwise to serve both aisles. The system can be installed in practically any type of storage building and can be furnished as a self-contained unit running on top of the racks or as an underrunning crane system where interlocking transfer can be furnished when desired. Unit can also be supplied with automatic prepositioning devices, with telescoping column, with cab for operator to ride with the load, and with many other features as may be required by the application.

TRAK-RAK Applications is a new 20-page illustrated booklet showing representative operating installations with many different types of materials in many diverse industries. It will be sent to you upon request without obligation. Write for it today!

CHICAGO TRAMRAIL CORPORATION

4000 West Washington Boulevard • CHICAGO 24, ILLINOIS

to 2330 Victory Parkway, that city.

Naren Industries Inc. moved its factory and office to larger quarters at 2104-6 N. Orchard St., Chicago 14. The firm makes photographic and lighting equipment.

Sanson & Rowland Inc. formally opened its new offices and warehouse at 186 W. Louden St., Philadelphia. The firm, which also maintains offices in Detroit, produces various types of screws, bolts, washers and nuts.

J. L. Ferguson Co., Joliet, Ill., moved its eastern sales division offices to 19 Beechwood Road, Summit, N. J. Wayne E. Gary has succeeded Carl A. Claus as manager of this sales division.

Gar Wood Industries Inc.'s St. Paul Hydraulic Hoist Division, Minneapolis, moved its sales and service functions to its new expanded plant site in Mattoon, Ill.

Crucible Steel Co. of America, Pittsburgh, opened its new branch sales office and warehouse building at 2051 Elmwood Ave., Buffalo.

Leschen Wire Rope Division of Watson-Stillman Co., a subsidiary of H. K. Porter Co. Inc., Pittsburgh, moved to its new general office at 2727 Hamilton Ave., St. Louis 12.

Colorado Fuel & Iron Corp., Denver, moved its Los Angeles office to 2444 S. Saybrook Ave.

Annan Co. opened a new plant at 6570 Telegraph Road, Los Angeles, for production of automatic control valve equipment.

VACATIONS

Radiart Corp., Cleveland, has shut down for vacation to July 19. No shipments will be made or received during the two-weeks period.

Steel Improvement & Forge Co. will close its main plant at 970 E. 64th St., Cleveland, for vacation from July 25 to Aug. 9. The firm's Champion Forge Division at 3685 E. 78th St., that city, is closed from July 4 to July 19.

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Designers and Builders of Ferrous and Nonferrous Rolling Mills, Mill Rolls, Auxiliary Mill and Processing Equipment, Presses and other Heavy Machinery. Manufacturers of Iron, Nodular Iron and Steel Castings, and Weldments.

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By the way, did you know that Shelby, Ohio was the birth place of the seamless steel tube industry in America?

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OHIO SEAMLESS TUBE DIVISION
of Copperweld Steel Company • **SHELBY, OHIO**
Birthplace of the Seamless Steel Tube Industry in America

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Technical Outlook

HIGH-STRENGTH STEEL—To show off properties of a new-type, super-tough, quenched and tempered steel, four large pressure tanks were literally blown up in public by burst and impact tests at Chicago Bridge & Iron Co., Birmingham, recently. Tanks were made of U. S. Steel Carilloy T-1, a new low-alloy steel with yield strength in the 100,000-psi range, three times that of mild steel. Welds up to the full strength of the base metal can be made in T-1 steel without preheating or postheating. Cost: Two and one-half times more than ordinary steel. (Early issue of STEEL will contain a full-length report.)

MODEL MAKING— Variations in humidity have always plagued pattern men in the auto industry. During the several months that go into the making of a full-scale wooden model, the material tends to shrink and swell. Many weeks are spent rechecking and recarving surfaces to maintain tolerances. Now relief is in sight. A laminated wood, impregnated with a water-soluble phenolic resin, may be the answer. Called Impreg, the material is said to have 70 per cent less reduction in swelling than untreated wood under water soaked conditions, and, in normal usage, swelling and shrinkage are held below current tolerance specs. The material was announced jointly by the Forest Products Laboratory, Department of Agriculture, and Ford.

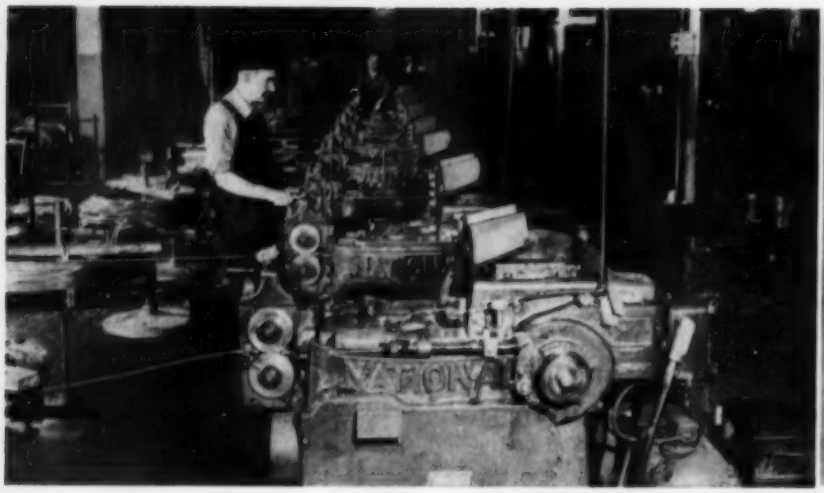
FINISHING— GM researchers in quest of "how to keep that showroom shine on your car longer" have come up with a device that weathers auto paint 20 times faster than nature. It generally takes from six months to a year to dull car finishes. GM's sunlight and dew machine does it in a week or two. The sun is a 1200-watt high pressure mercury arc lamp. The dew is water vapor condensed when cold water passes through a metal box on which test panels are clamped. Resembling a lottery drum, the unit is about five feet across. They've found sunlight in the blue and ultraviolet range causes chalking. When the binder in paint is removed, pigment particles stick out through the surface and make it rough—like stones in a washed-out field. This accounts for loss in paint gloss.

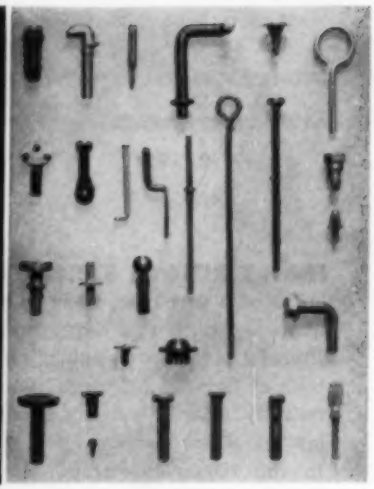
HANDS OFF— Unauthorized changes in adjustable or removable parts can be guarded against with a tamper-proof sealer called EC-1252. It is said to adhere well to aluminum and steel. Low temperature adhesion is good, and the dried sealer can be heated slightly above 200°F for a short time with no sagging or loss of adhesion. It's a product of the Adhesives and Coating Division, Minnesota Mining & Mfg. Co., Detroit.

MACHINING WITHOUT MACHINES— It is reported that aluminum and other metals are being milled by a controlled etch process. The preformed part is coated with an acid-resisting material in spots not requiring an etch. Unwanted metal is then eaten away in a chemical bath. Advantage of the process is said to be that it makes unconventional designs economically practical. Electronic controls afford accuracy of 0.002 inch.

NEW CLAD— New mill unfolding at the Birmingham plant of Chicago Bridge & Iron Co. will be turning out clad steel before too long. Known as Hortonclad, the method employs a vacuum-fitted, thin bronze-type bonding layer. Versatility and accuracy seem to be the real payoff feature. Unusual combinations, such as titanium and tantalum, can be made. Several Hortonclad vessels now in service are living up to full expectations of CB & I people.

Metalworking Outlook—p. 59 *Market Outlook—p. 169*





The Case for Cold Heading

Parts are made at high production rates at substantial savings in material costs. Materials most commonly used are the SAE steels 1010, 1018, 1035, 4037 and 8637

By D. H. SAMUELSON
Assistant Director
Technical Sales and Research
National Screw and Mfg. Co.
Cleveland

THERE is a rapidly expanding use of the technique of cold heading in the manufacture of many parts previously made by other methods. Current production is about half a billion items daily.

The process originated with the manufacture of bolts and screws; however, it is now being used to make an extremely wide variety of special items, many of which could not be made economically by any other method. Operations are performed at high production rates, with great savings in material.

Background—Cold-headed parts, supplemented by secondary operations, often offer greatest cost saving possibilities on parts formerly made on automatic screw machines. However, many parts made on the former cannot be made on cold headers and vice versa. But an elementary understanding of cold heading often is sufficient to determine if it is feasible on a particular part.

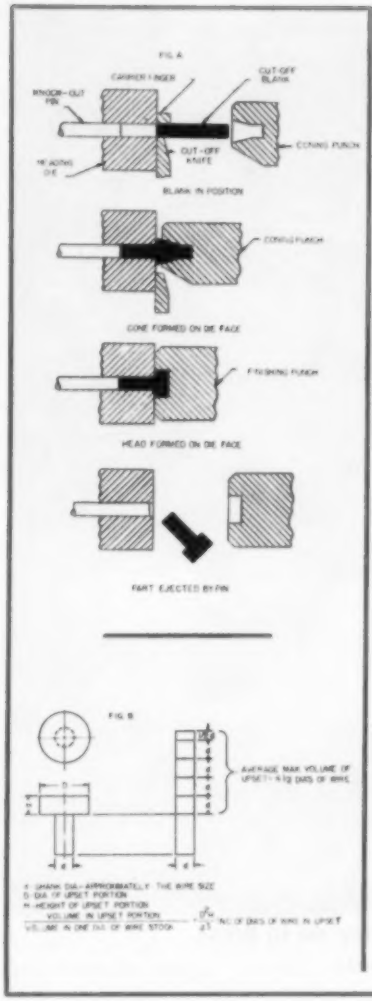
Cold headers operate at standard production rates of 250 pieces per minute on small parts up to ⅛ inch in shank diameter. Other standard rates: On ⅜ inch shank diameter, 100 pieces per minute; on ¾ inch shank diameter, 55 pieces per minute.

Operation—Photo above shows a typical battery of cold headers that make fasteners and many other special items from a coil of wire. In the cold-heading operation, the material (coiled wire) is fed from a reel through straightener and feed rolls into the cold header and against a stop to maintain accurate length of the cut-off blank. The cut-off knife then shears the cut-off blank from the wire, and with the help of the carrier finger, brings it to the die.

The top illustration in Fig. A shows the cut-off blank in position between the heading die and the coning punch. As the coning punch advances and pushes the blank into the die, the cut-off knife and carrier finger are no longer needed to support the blank. They recede quickly to avoid the advancing coning punch as shown in the next illustration.

The coning punch then recedes, and on a two-stroke header, the finishing punch then advances, and the head is formed on the die face as shown in the next illustration. As the finishing punch recedes, the knock-out pin then advances and the part is ejected, as shown in the bottom illustration.

Considerations — In the design and manufacture of items by the cold heading method, there are limiting dimensions that must be



considered. One of the most important is the volume of material that may be upset into a head or shoulder. Because most cold heading is done on two-stroke equipment, an example is given in Fig. B to show calculation required to determine the permissible upset volume on a two-stroke header.

The average maximum volume that can be upset in two strokes equals 4½ diameters of the wire stock. Because the wire size is about the shank diameter, it is merely necessary to determine the total volume of the finished upset portion and divide this by the volume in one diameter length of the shank. This gives the number of diameters of wire in the upset portion of the head or shoulder and can be compared with the maximum amount. Designs are made accordingly.

Extrusion—In addition to upsetting in the cold header, it is often advantageous to extrude—usually simultaneously with upsetting. The operation involves the reduction of a portion of wire or shank to a smaller diameter by forcing the material into a die of lesser diameter.

Fig. C demonstrates a shoulder upsetting job that incorporates extrusion in both the die and the heading punch. The diameter of the wire in the cut-off blank is 0.373 inch. In the first heading punch operation, both ends are extruded to 0.329-inch diameter. In the finishing, heading-punch operation, the conical shoulder is upset to ¾-inch diameter, and the extruded ends are upset to 0.330-inch diameter, which is correct for rolling a ⅜-16 thread, as shown on the finished roll threaded part.

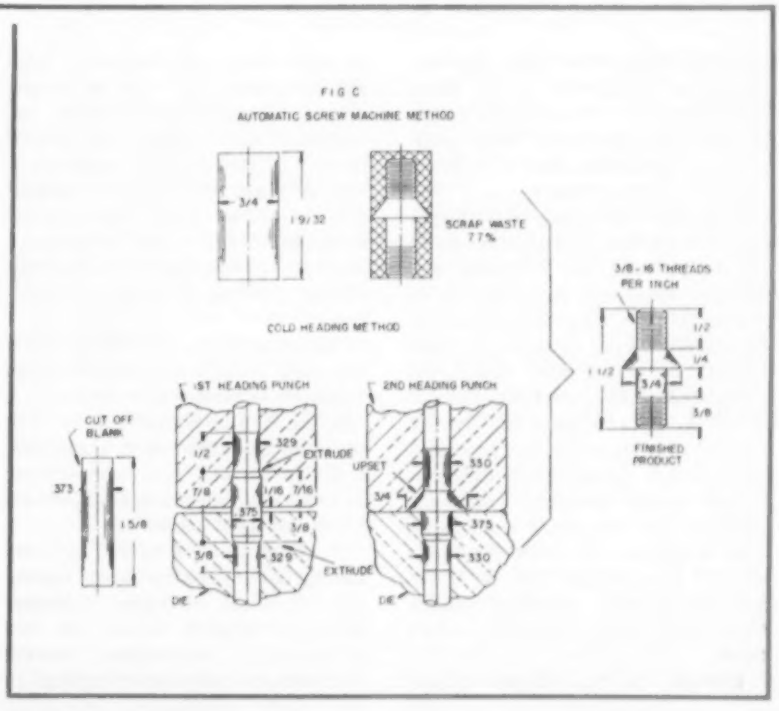
Cost—The same part made on an automatic screw machine from bar stock is also shown in Fig. C—bar stock here is ¾ inch in diameter, which is the largest diameter of the finished part. The length of the stock must also be longer than the finished part by the width of the cut-off tool.

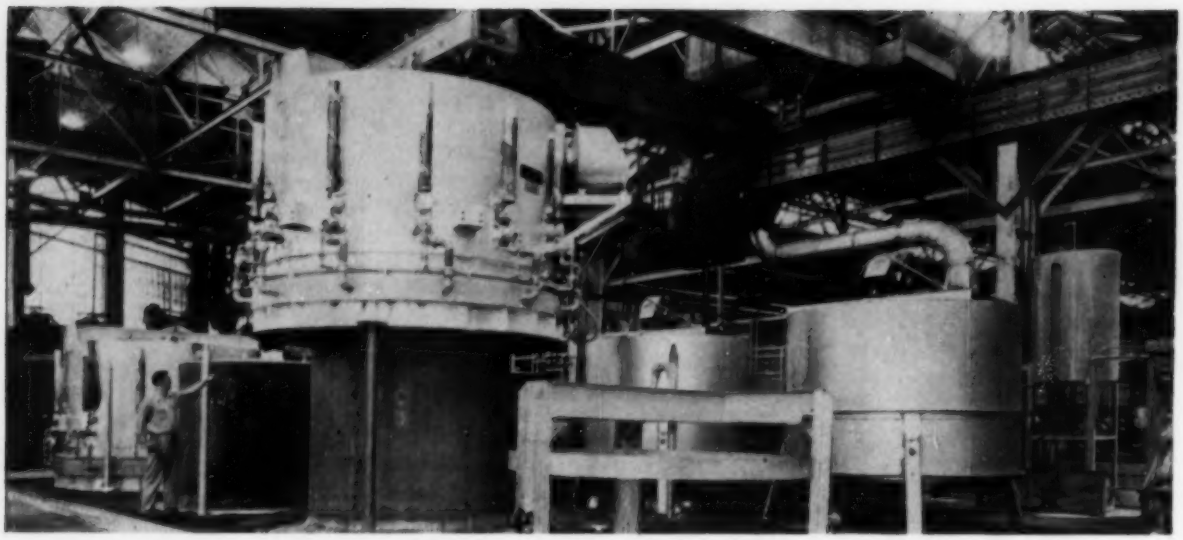
On the part shown in Fig. C, the cost of the material is four times higher on the automatic screw machine than on the cold header. There is a scrap loss of 77 per cent with the former, relatively little with the latter.

A contributing factor to the cold-heading saving is that cost per pound of bar stock for automatic screw machines is much higher than coiled wire for cold headers. The total cost of the completed part, including labor, setup, tooling and material, would be about three times higher when made on a multiple spindle automatic screw machine as compared with the cold-header method.

Materials—A variety of materials, such as stainless steel, brass, copper and aluminum, may be cold headed; however, the most commonly used are the SAE steels 1010, 1018, 1035, 4037 and 8637. A proper selection of the material with suitable heat treatment will permit a hardness up to 40 Rockwell C and tensile strengths up to 180,000 psi.

Photo on the opposite page shows a group of special parts made by cold heading. Secondary operations are performed—such as threading, milling, bending, flattening, drilling, trimming and grinding—to complete the finished part.





Crane lifts heating furnace from load of aluminum coils contained in the inner bell. Coils are cooled in the controlled nitrogen atmosphere, too

INERT GAS ANNEALING . . .

Puts Zip In Aluminum Strip

It's paying off at Scovill where they believe they must control grain structure variables as closely as they do in brass. Less "orang peel" and "earing" is the dividend

PIONEERING with inert gas annealing of aluminum, Scovill Manufacturing Co., Waterbury, Conn., is tailoring aluminum strip with working properties similar to brass and some types of steel.

Last fall the company brought onto the market a new coiled sheet aluminum that can be fabricated without using new tools or altered techniques. Termed "Truspec," it owes its working qualities to close control of grain size, directional properties, temper and dimensions. Strip is recommended for drawn, formed or stamped parts, produced on presses, progressive die machines, eyelet machines, etc. Company is now supplying continuous coils weighing up to 2000 pounds or 100 pounds per inch of width for use in long, non-stop production runs with minimum down time.

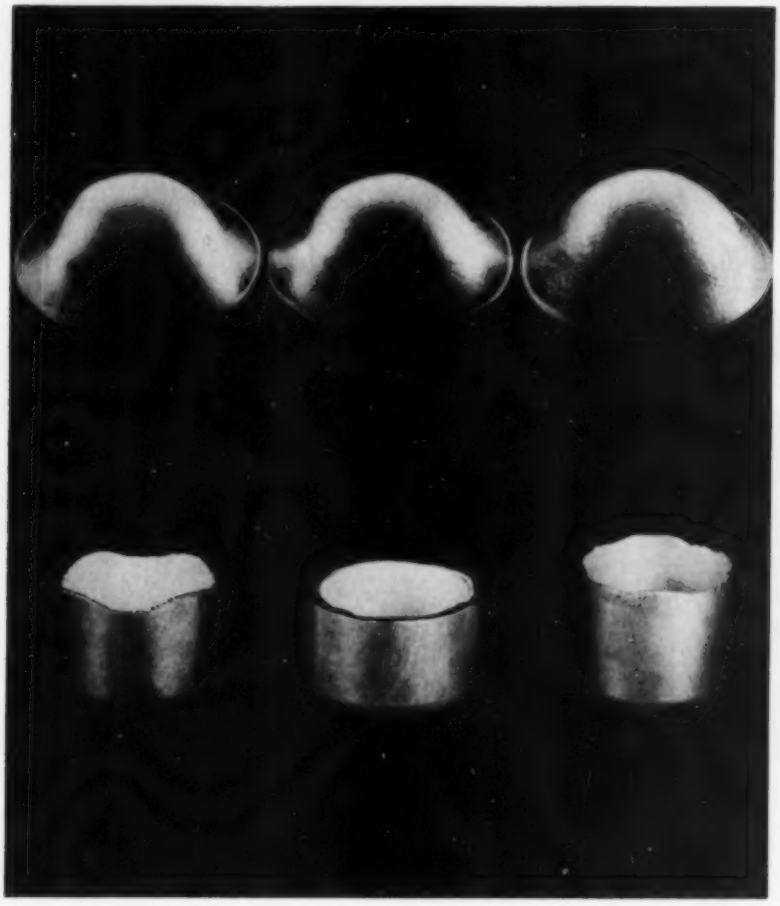
Control Is Key—Close control of cold-rolling and annealing minimizes grain size spread which causes roughened surface or "orange peel" effect on drawn parts. It also affords closer control of "earing" characteristics of the metal in which the plastic-working of the coiled strip flows more readily in certain directions during drawing or forming operations.

Techniques of controlling grain size and directional properties in brass were developed over the past 150 years, and Scovill thinks they can find the answers in aluminum, too. To do so, they believe they must control variables in aluminum as closely as in brass.

"Orange peel" is caused by over-anneal or over-stretching during the drawing operation. Proper hardness depends on the use and fabricator's technique. Scovill technicians have been trying to learn working properties and abilities of alloys as well as characteristics of various types of tools and their effect.

Grain Size — Importance of grain size control of material applies to aluminum wrought alloys as well as to copper-base alloys, say Scovill technicians. Effect of large grain size in producing a roughened surface or "orange peel" on finished part after stretching is illustrated in the accompanying photo showing three cups drawn from material of varying grain size. Controlling the cold-rolling and annealing of aluminum strip makes possible minimizing resultant grain size spread.

In drawing or forming operations, formation of ears result from inherent directional properties or preferred orientations of the grains in which plastic working of the coiled strip flows more readily in



Unretouched photographs show varying degrees of "orange peel" effect, (top) and three degrees of "earing." Middle cup is ideal, one at right satisfactory

certain directions. Two prime types of ears are present in aluminum alloys: The 0 to 90-degree ears resulting from predominance of the annealing texture, and the 45-degree ears resulting from predominance of the rolling texture in the annealed temper strip.

When the two balance each other, no detrimental height of ears is found, and "non-earing stock" results. Earing is not eliminated entirely in deep drawing, but the degree (usually 3 to 4 per cent earing is satisfactory) is not considered detrimental to a drawn article processed in a normal manner.

Rolling Data — Rolling of aluminum alloys starts with coils as large as 100 pounds per inch of width.

The coils are reduced to a minimum of 0.008 inch and widths up to 28 inches. Intermediate anneals are sometimes necessary, depending on starting gage and desired finish gage and hardness. Close thickness control is attained by gaging with Pratt & Whitney Electrolimit flying mikes. Quality of reroll stock is important: A 200° difference would make little difference in hot rolling operations but it is quite important to the re-roller in achieving lot-to-lot uniformity.

Nitrogen Anneal—Normally aluminum is annealed in a furnace without protective atmosphere. Scovill does it in an atmosphere of about 95 per cent nitrogen, 1.5 per cent carbon monoxide, and 1.5 per cent hydrogen. For this job it utilizes a Lee Wilson bell-type annealing furnace with charge size of 78-inch diameter and 60-inch piling height.

In its installation are six stations and two heating units. The portable base heating system is supplied with nitrogen through a 3000-cfh capacity generator (built by Gas Atmospheres Inc.) which converts natural gas to the proper mixture. Before going to the generator the natural gas is run through a Lectrodryer gas dryer to lower the dew point.

Typical Cycle—A typical complete annealing cycle would be 8 hours.

Scovill furnaces are capable of handling about 18,000 pounds of brass per hour, and 6000 pounds of aluminum per hour. The load is cooled in the controlled atmosphere also, as the airtight inner cover is left in place when the furnace is removed. Standard industry practice in heating temperature range and time are generally followed.

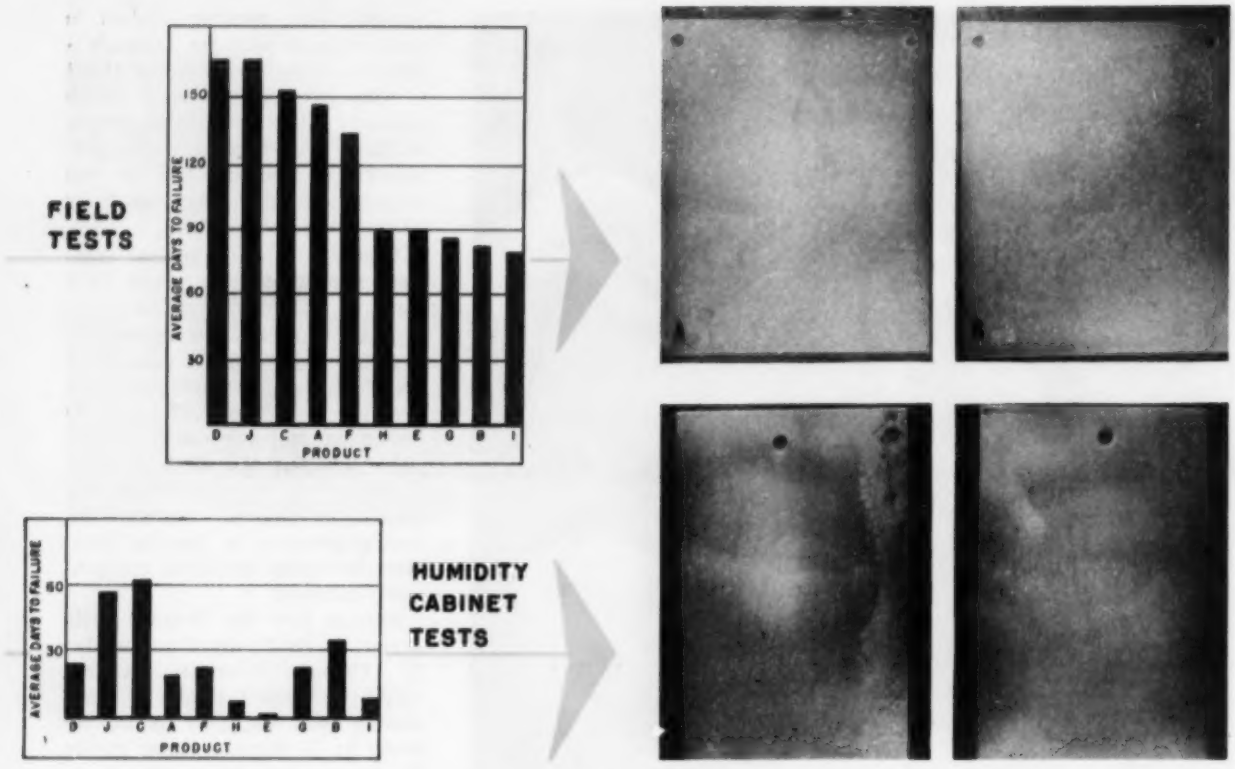
Here is how the 10-stage cycle is run: 1) Heat purged and ready; 2) Change nitrogen exhaust valves; 3) Move furnace; 4) Place cooling hood and after cooling remove it; 5) Remove inner cover; 6) Remove thermocouples from load; 7) Change loads; 8) Place No. 2 thermocouples; 9) Place inner cover; 10) Purge inner cover (approximately 2 hours).

Minimum Scale—When annealing aluminum in a conventional oxidizing furnace, aluminum oxide or magnesium oxides occur on the surface.

At Scovill it was found atmosphere units reduce scale induced by oxides to a minimum. Ridding the surface of this abrasive material extends fabricators' tool life.

Company is presently rolling these alloys of aluminum: 2S, 3S, 4S, 50S and 52S. It is also experimenting in the furnaces with copper-zinc alloys. Tempers available in 2S and 3S alloys are O, H12, H14, H16 and H18. In 50S, 4S and 52S, the following tempers are offered: O, H32, H34, H36 and H38.

In rolling, Scovill uses a free burning oil. It's a low-flash, low-fire, low-carbon residue mineral oil, with viscosity of 100 at 100, and to which is added 7.5 per cent white kerosene. After annealing, coils go to a 30-inch slitter which operates at surface speeds up to 1000 fpm and delivers widths down to ½ inch.



To provide visual indication of poor correlation between humidity tests and industrial conditions, photographs of steel panels taken after six months exposure at an industrial location are compared with photos of panels coated with same corrosion-preventive materials taken from humidity cabinet after 20 days exposure at 100° F and at 100% relative humidity

IN CORROSION TESTING...

Humidity Cabinets Don't Tell

Field evaluation continues to be the most reliable method of evaluating corrosion-preventive performance. Accelerated test results are misleading, almost impossible to reproduce

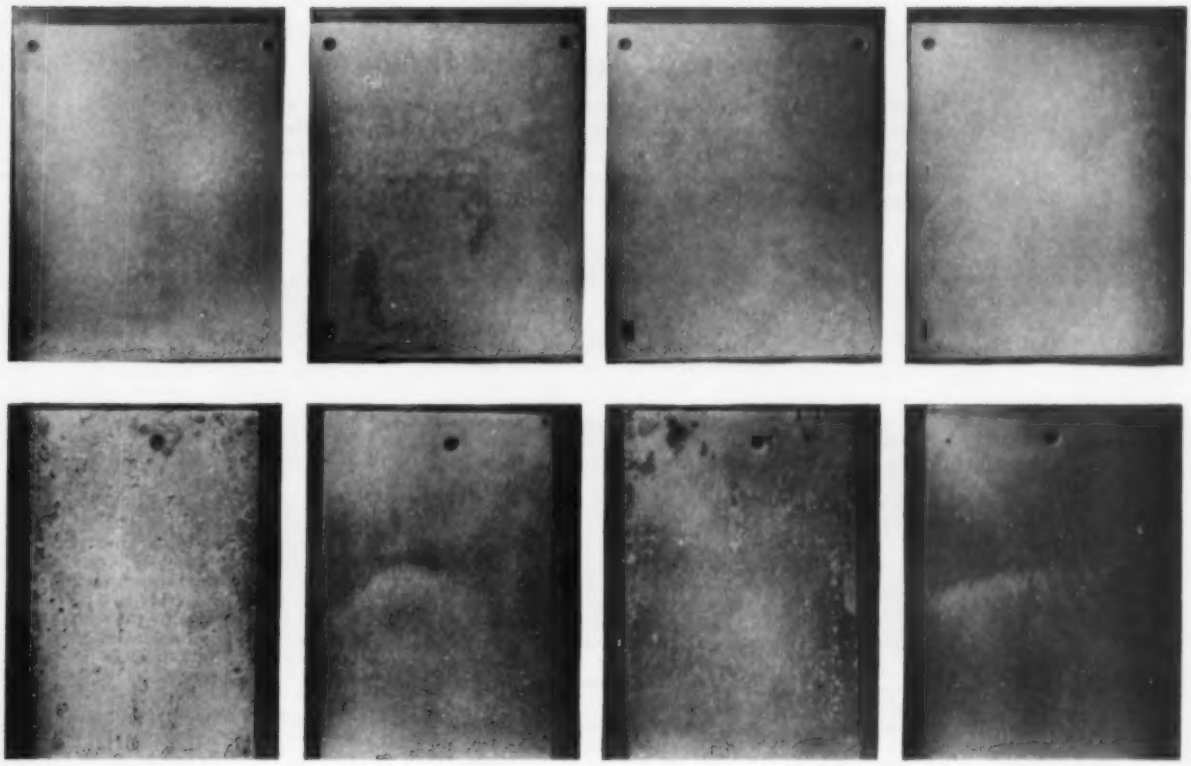
AN ACCELERATED laboratory test, such as the humidity cabinet, shows no correlation with actual field conditions.

This conclusion is indicated as a result of efforts to establish the nature of corrosion - preventive properties of a wide variety of materials under industrial field conditions. The investigation of corrosion preventives' performance under accelerated laboratory conditions has been the subject of intensive investigation for three decades, with particular emphasis during and since World War II.

A considerable amount of this research time has been expended to develop accelerated test equipment that would give reproducible results, not only in a single specific test setup, but also in replicas of the equipment run under controlled conditions in other locations. Correlation of this accelerated corrosion test information is, of course, the prime object.

Variables—Performance of the humidity cabinet under carefully controlled conditions was examined and subsequently reported in 1948 by M. N. Sandomire for the Navy Bureau of Ships.

Data were submitted on special forms by several different commercial and government laboratories over a seven-month period from August, 1947, to March, 1948. Analysis shows that results within a single cabinet fluctuated, in some cases, approximately 20 days for the same oil



the Whole Story

By LOUIS SCHLOSSBERG
Director, Product Development, Metal Division
Quaker Chemical Products Corp.
Conshohocken, Pa.

Wide spread of results in the AN-H-31 cabinet for seven different laboratories shows the poor correlation between humidity cabinets, even under most careful controls.

Laboratory	Average Days To Failure Oil 1	Oil 2	Oil 3
L	34	84	47
M	18	82	46
N	27	40	16
P	14	13	52
R	26	44	20
S	18	14	12
T	34	57	19

Bureau of Ships Report No. IV-D-31-8-3

tested. Variation in results for any specific corrosion preventive for cabinets in different locations also fluctuated considerably.

Regarding time to failure for the three different oils tested, not only did the various laboratories grade the oils in different order, but in some cases where the order was the same, actual average days to failure differed widely (see table).

Close Control — It is evident from the many types of test procedures and equipment noted on page 116 that refinements and improvements are continually considered necessary to control the many variables present.

These factors are among the most important: Metallurgical characteristics, method of cleaning and application of corrosion preventive material, size, position and shape of the specimen as compared to test cabinet dimensions, relative movement of metal and its environment, temperature and humidity variation and fluctuation, nature of atmosphere and contaminants, water droplet size, purity of water and contact with dissimilar metals.

Field Tests—In view of difficulties in reproducing and correlating results, a series of field tests was conducted by Quaker Chemical's research department at 26 industrial locations in seven New England and midwestern states. Using a wide variety of corrosion-preventive formulations, speci-

Development of Accelerated Testing

A great variety of corrosion test equipment has been developed in an attempt to provide meaningful as well as precise data for evaluation of corrosion films of various types. Not a complete survey, the following is an exposition of a number of different procedures and test equipment which comprise highlights of investigations.

1. DARSEY developed a cabinet controlled at 100 to 110° F and 96 to 100 per cent relative humidity. Test panels are placed on a base at a somewhat lower temperature than that in the cabinet to induce continuous condensation on the specimens.

2. SWINDEN and STEVENSON adopted a cabinet in which specimens are suspended from a moving belt and passed through a cycle designed to simulate atmospheric conditions.

3. PRAY and GREGG devised a cabinet in which test panels are mounted on the periphery of a rotating drum, moving through three compartments of different conditions. First compartment functions at 110° F and 100 per cent relative humidity; second is a drying section; third is a cooling chamber where specimens pass near walls cooled to 38° F to facilitate condensation when panels re-enter first humidity compartment.

4. BATTELLE MEMORIAL INSTITUTE's accelerated atmospheric test is one in which steel panels suspended on a revolving ring are given three cycles of wet, dry and cooling per hour. Preliminary exposure of coated test specimens to atmosphere is required.

5. COLQUHOUN and STEVENS devised a cabinet in which air is circulated by two fans and where a fine water spray is maintained through relays while air temperature is controlled thermostatically for heating as well as cooling.

6. Panels in QUAKER CHEMICAL PRODUCTS CORP.'s cabinet are subjected to humid atmospheres without condensation taking place. Temperature is maintained at a constant level by warming a lagged cabinet with vapors from a boiling liquid at desired temperature.

7. BURNS recommends that accelerated tests be run by lowering temperatures from 120 to 80° F over about one hour and subsequently increasing temperature for 30 minutes, maintaining relative humidity above 90 per cent.

8. Equipment subjecting coated panels to four cycles: Ultra-violet light, rain spray, cold and heat has been used to evaluate various coatings' corrosion preventive properties. Test specimens are mounted on a revolving drum and are exposed to each of the conditions in turn.

9. COMPTON recommended that temperatures be maintained at 120° F and at 95 per cent of relative humidity, periodically interrupted by cooling to 106° F to induce condensation for testing under accelerated humid conditions.

10. COOKE and MERRITT's procedure for testing under humid conditions requires six-hour exposures at 149° F and 95 per cent relative humidity, followed by 18-hour exposure at room temperature—at which time condensation occurred.

11. C.C.I. humidity cabinet, devised by the British Ministry of Supply, is maintained at 100 per cent relative humidity with 108 to 118° F temperature cycle. Cycle permits continuous condensation of water on the specimen during the test.

12. BAKER, JONES and ZISMAN developed a fog cabinet in view of the difficulties experienced with reproducibility for the AN-H-31 and AN-8517 humidity cabinets. A fine spray of clean water is atomized and deflected against a baffle plate in the chamber, operated at 120° F. Their results indicated more convenient and reliable information than was given in the humidity cabinet. Panels are affixed to a rotating table moving at 1 rpm—sufficiently slow to avoid difficulties with air currents and impact between specimen and water.

13. TOUR developed a procedure of "alternate condensation testing" in which panels pass through chambers on a turntable. Air in the first chamber is saturated with water vapor at 160 to 170° F and directed against the sample. In the second chamber, air at about 70° F at a relative humidity of 25 per cent is blown against the sample. Cool, dry air rapidly absorbs heat and moisture so specimen is covered rapidly with condensed moisture film when it re-enters the first humidity section. Gases, such as sulphur dioxide or hydrogen sulphide may be introduced at the wheel's periphery.

14. CHEMICAL RESEARCH LABORATORY of British Iron & Steel Research Association devised the CRL sulphur dioxide test in which coated steel specimens are suspended in a glass beaker containing a dilute solution of sulphur dioxide in water. Setup is maintained at 113° F in the vapor phase and cpndensation is effected by a water-cooled lead coil.

15. OPINSKY of General Motors Corp. devised an accelerated humidity test in which elevated temperature and a slow humidity cycle of about 8 hours, where humidity varied from 10 to 100 per cent, induced accelerated corrosion. Severity of the test is reported to be about three times as great for the same steel exposed to modified ASTM salt spray test operated with 5 per cent salt solution.

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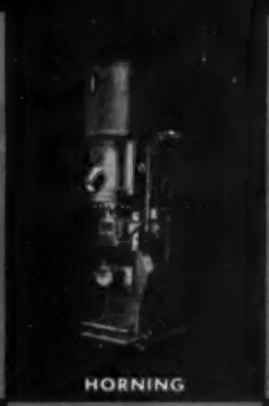
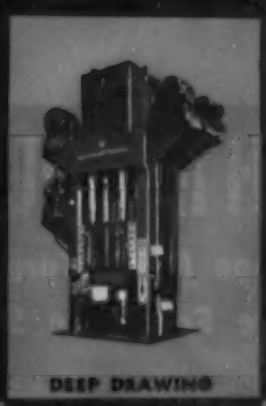
15. Opinski, A. J., ASTM Bulletin, 47, (1953).

(*Please turn to p.* 118)

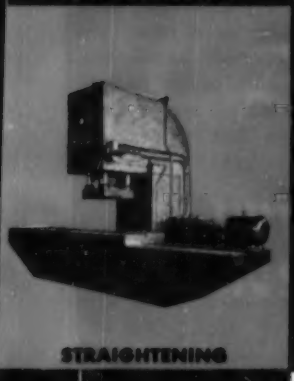
COLD EXTRUSION

FORMING


HORNING

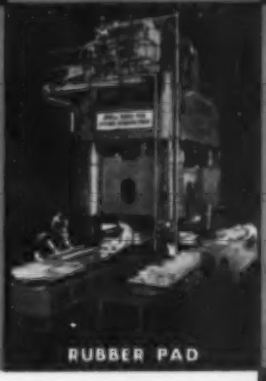

DEEP DRAWING

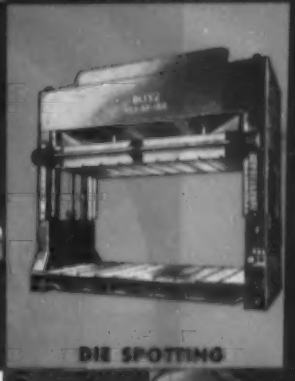
HOT FORGING


STRAIGHTENING

COINING

POWDERED METAL


RUBBER PAD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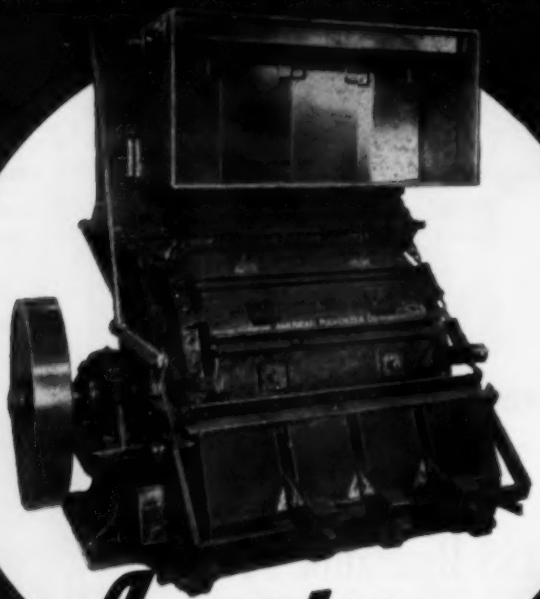

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mens were set up in locations involving almost every type of storage, processing and fabricating area.

Cold-rolled 5 x 6-inch 24-gage 1010-type steel panels were degreased with thiophene-free benzine and coated under standard conditions at each of the test locations. Three panels for each composition tested were suspended from racks 4½ feet long by 4 feet high. They were rated periodically for over-all impression, nature of corrosion, stain, pitting, number and color of spots, average size of spots, film color, transparency and continuity.

Analysis, Comparison — Data from these tests are analyzed, then compared with results from our humidity cabinet tests run with the same materials and with the same lot of steel. One difference: In the accelerated tests, smaller-size panels were used.

The data show that the humidity cabinet results are not indicative of performance under industrial conditions. For example, one corrosion - preventive formulation possessed less than one-day protection in the humidity cabinet at 100°F and 100 per cent relative humidity. But it gave field results that were about the same or slightly better than another rust preventive that gives more than 40 times as much protection in the humidity cabinet.

Another preventive turned in a superlative performance in the field, but registered only about one-third the protection in the humidity cabinet as another preventive that was actually inferior under industrial conditions. A study of charts on page 114, in which the data are presented for field performance based on average results as of this date, bears out this absence of correlation between cabinet tests and field performance.

Continuing Development — The field tests include several basically new compound types that show unusually long and effective protection.

Meanwhile, considerable effort is being expended by our laboratories to develop an accelerated test that will do the job.

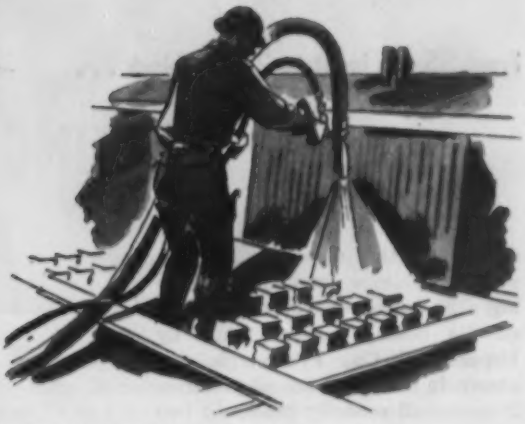
How to get the most out of

Suspended Refractory

CONCRETE CONSTRUCTION

An example of B & W's Modern Suspended Castable Construction

Cross section of castable form showing patented anchor tile and "ice-tong" hanger, which can be attached any place on I-beam.



B&W Kaocast may be gunnited, as shown above, or poured into a form.

Cross section of finished B&W Kaocast soaking pit cover, showing anchor tile and "ice-tong" hangers.

The big reason behind today's growing use of suspended castable construction is lower installation cost. The replacement of standard brick and special shapes by refractory castables (just as easy to use as structural concrete) is becoming so widespread that every furnace operator should consider it as a possible means of cutting his own installation costs.

Not only can refractory castables be handled easily, but such troublesome jobs as notching I-beams have been eliminated with B&W's patented anchor tile and "ice-tong" hanger. Maintenance patching is quicker, too, because this hanger can be slipped on or off anywhere on the beam.

But the major reason for the general preference of B&W's suspended castable construction is B&W Kaocast—the only refractory concrete for service up to 3000 degrees. Even at lower temperatures, B&W Kaocast results in longer, more economical service because it has a high resistance to spalling and practically no reheat shrinkage.

The step-by-step story shown at the right is an example of how B&W's modern suspended castable construction is used in soaking pit covers. These covers take plenty of abuse because of the rough handling they get, but B&W Kaocast stays on the job.

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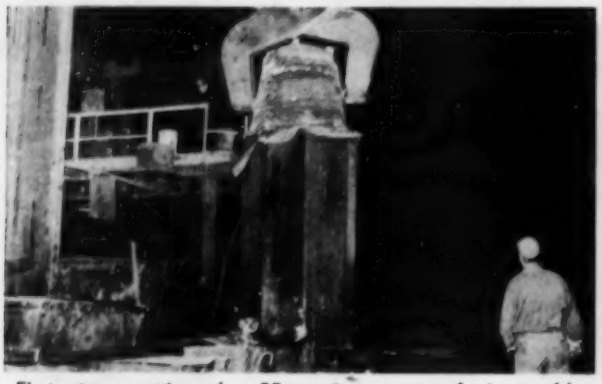
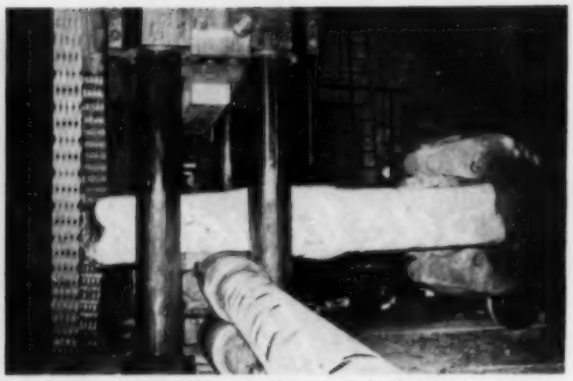


First step, getting the 55-ton ingot out of the mold and to the press bay where the manipulator took over



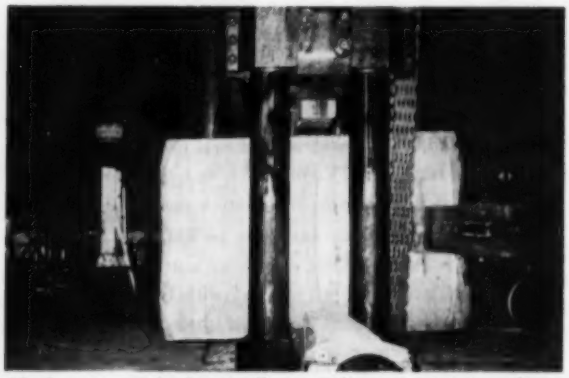
With the help of manipulator and chains, ingot was forged to approximate shape. Several reheats were needed

From 55-ton ingot to 23-ton block . . .

FORGING A KING-SIZE DIE HOLDER

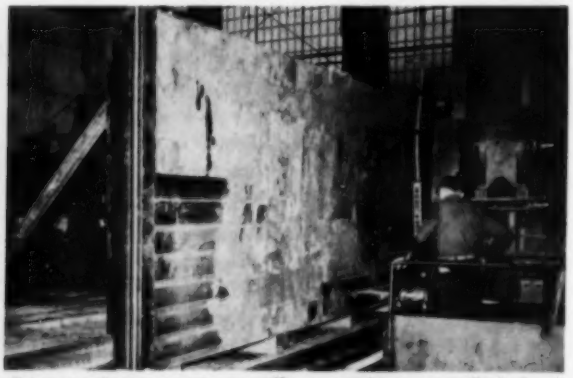
SOME of the steps in forging, rough-machining and heat treating a 23-ton hardened and tempered die holder, largest made by Heppenstall Co., Pittsburgh, are shown in this sequence of pictures. Heppenstall recently produced two of the die holders. Each is 78¼ by 168 by 12¼ inches and was made from a 55-ton ingot of Hardtem die steel.

The die holders were delivered to the Cleveland plant of Aluminum Co. of America where they will be used in 1500-ton hydraulic press.



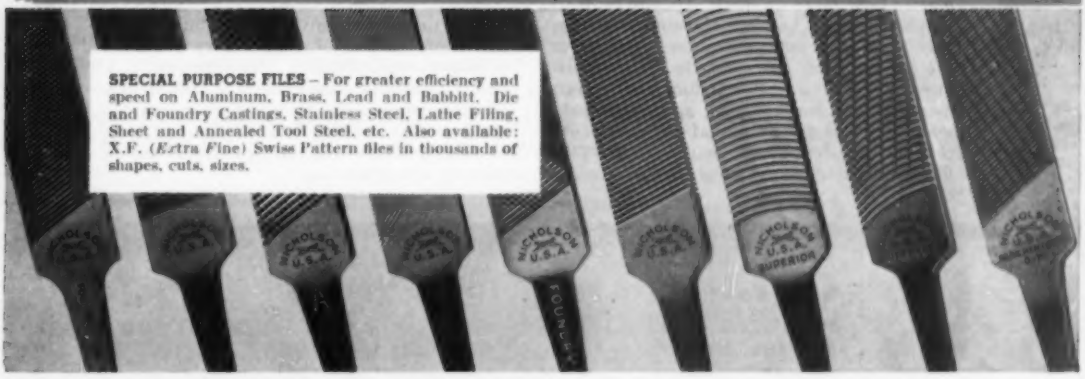
Block was worked on all six sides to minimize directional mechanical properties. Press is 1500-ton model

As part of the heat treating, block was air quenched. Final machining brought the weight down to 23 tons



Prior to heat treating, milling machine travelled back and forth across block faces for preliminary machining

QUALITY PROVED BY PERFORMANCE



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INDUSTRY'S WORKSHOP FOR THE FINEST IN PLATING AND POLISHING PROCESSES • EQUIPMENT • SUPPLIES

MACHINE TOPICS

BY R. F. HUBER, *Machine Tool Editor*

It's no secret that American machine tool companies are having a tough time boosting or even keeping up their exports.

Toughest part of the picture is that, with the voluminous red tape involved in buying American machines abroad, it isn't easy for a user in, let's say, Europe to buy the American job no matter how badly he wants it.

Despite hurdles, many American builders are going all out to build up foreign business. Several have licensed their machines to be built abroad, and more are refocusing attention on bolstering foreign representatives and foreign sales programs.

At the Fourth Machine Tool Exposition in Milan, Italy, this September, more than 20 American builders will exhibit some of their machines to potential European customers.

Giddings & Lewis, for example, will exhibit four machines including a double-housing planer, a floor-type and two table-type horizontal boring, drilling and milling machines.

Metalcutting Marriage

Carbides and automatic screw machines are a new team in a development program jointly sponsored by Cone Automatic Machine Co., Windsor, Vermont, and Carboloy Dept., General Electric Co., Detroit.

Although the program is still in initial stages, here is what the engineers have found: (1) Multiple tool setups on automatics are not barriers to cemented carbides. (2) Tool holders and attachments must be engineered to meet job conditions. (3) Proper tool selection and geometry are more critical on automatics than on most other machines. (4) Adequate horsepower is essential, and (5) A good method of getting adequate amounts of water-based coolants to the cutting area is a must.

At least one factor makes the automatic-carbide union a natural. Idle time (index, tool approach, etc.) is so low that any reduction in actual cutting time will make a worthwhile cut in total cycle time. Thus, faster cutting begets higher production. This is true, but to a lesser degree, on a hand operated machine where, for instance, a cycle time of five minutes may represent four minutes handling and only one minute actual cutting time.

Both Cone and Carboloy have stressed the importance of rigidity in tool and machine.

C. K. Morgan, Cone consultant working on the program, says: "With correct conditions, at least six to ten times the stock removal can be realized with carbide." Out of this program the companies hope to offer a complete package including machine recommendations, tool advice and experienced service personnel.

General thinking seems to indicate that eventually carbides will take their place on automatics as a regular production tool, working, in many cases, with high-speed steel tools to give maximum performance.

You can make your heaviest lifts, maintain a more-than-ample safety factor, yet reduce the weight and size of your slings with Yellow Strand Braided Safety Slings. They have 45% less bulk, 80% less weight than BBB chain slings, yet have a 25% greater safety factor; 12% less bulk, 66% less weight and 20% greater safety than alloy chain slings. You get a bonus in a non-marring, non-slip grip and in exceptional flexibility with handling ease.

We can design a Yellow Strand Braided Safety Sling for your problem lifts—just send details, we do the rest!

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SPECIFY...
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Illinois mill: 24 holes

Illinois mill: 12 holes

271 PITS

In the steel industry's current modernization program, Surface Combustion has installed 271 one-way fired soaking pits, with a capacity of 20 million tons a year. That's nearly 90% of the pits built since World War II. We believe there is a simple explanation for these facts: Surface Combustion is known for the quality of engineering that developed the jet pump recuperative system and for the experience gained in almost 50 years of working with steelmakers. 'Surface' means equipment that performs up to the customer's requirements, or better.

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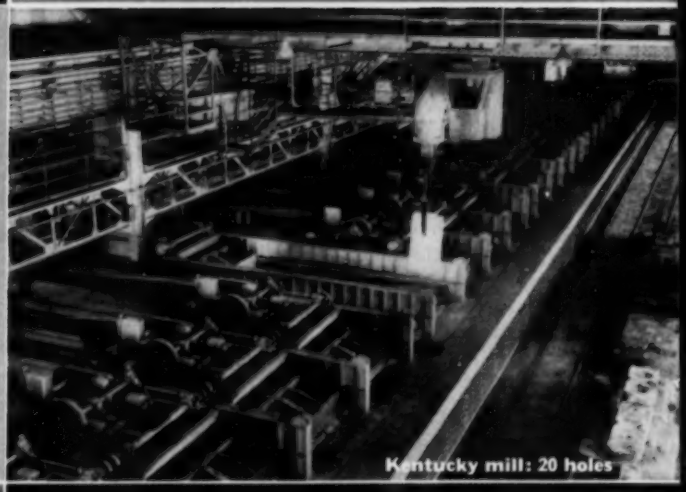
Toledo 1, Ohio



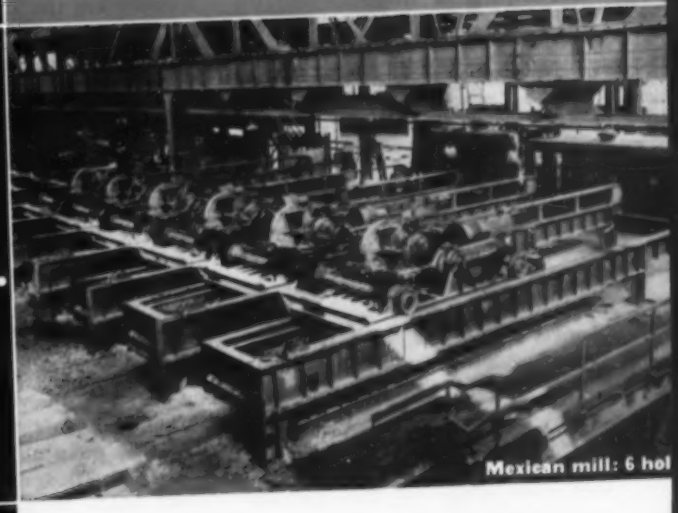
Kentucky mill: 20 holes

Michigan mill: 20 holes

Pennsylvania mill: 15 holes

IN 7 YEARS

20 MILLION TONS/YR.



Surface

STEEL MILL FURNACES

This mass of sponge weighs well over a ton. Back in 1948, production was limited to 100-pound lots

Progress Report on Titanium

With an eye to getting the material out of the luxury class, producers are making an all-out effort with new processes. So far, electrolysis looks pretty promising

"INTEREST in titanium and its alloys is becoming widespread, owing to its successful manufacture in ductile form and promise of quantity production in the not-too-distant future."

It's hard to realize, but that's the way people were talking about titanium in 1949 (STEEL, June 20, p. 100). Chances are, a recent statement by DuPont, "Considerable progress has been made in the manufacture of titanium sponge, which has resulted in the first price reduction (about 8 per cent)," also will be a museum piece in the not-too-distant future.

Now that production and properties are no longer a deep mystery (see series of five articles starting May 10, p. 148 in STEEL), the last hurdle lies in the direction indicated by DuPont: Producers are charged with the task of squeezing prices down to a realistic level.

Three Routes — So far, prices have been tied to the economics of the expensive Kroll process (thermal reduction by active metals). Thermal dissociation, such as the Van-Arkel deBoer hot-wire process and electrolytic processes haven't hit the production stage.

Although mountains of effort have gone into the refinement of the Kroll process, the smart money today seems to be putting stock in the electrolytic process.

It is thought that at least one big company not officially in the titanium business at this date is close to ironing out the kinks in the electrolytic process; and those who are talking are pretty optimistic, promising considerable price reductions at no sacrifice in quality.

Progress—Shawinigan Water and Power Co., Montreal, seems to have the jump on the field at the moment. They are at the pilot-plant stage with a process that produces the metal by electrolysis of what is reported to be $TiCl_4$ in NaCl, KCl or $CaCl_2$, using a cell of special design.

First to disclose a successful process in detail was Horizons Inc., Cleveland. They are producing small quantities of commercially-pure metal powder by the electrolysis of K_2TiF_6 in molten NaCl. Process is carried out under an inert atmosphere in an all-graphite cell.

Relatively salt-free titanium is found in the outer part of the cathode deposit, though some salts are mixed with the inner matrix. Metal is recovered by aqueous washing techniques. Said to be of high purity, it can be fabricated by standard powder metallurgy methods.

Others—Horizons also has developed a process that produces metal of moderate purity from TiO. Of the several ways they have found to produce the latter, the most promising is the reaction of titanium carbide with zinc or magnesium oxide. Resulting oxide (in finely divided form) is introduced into a molten $CaCl_2$ bath. Titanium is formed as a deposit of loosely packed particles in a $CaCl_2$ matrix around the iron cathode. It is recovered by aqueous techniques.

R. S. Dean, Chicago Development Corp., thinks better results can be obtained if chlorine is added to the fused chloride bath. Titanium would be plated on the cathode, instead of being deposited around it. This would eliminate the spongy, salt-mixed deposit.

The man on the job likes Victor's

WIDER WORK RANGE

Using a VICTOR No. 310 torch butt with two S2 extensions and No. 8 type 4 tip, Joe Wyman (Shreve Welding Co., Oakland, Calif.) repairs cast iron heating boiler header with VICTOR No. 1 low fuming manganese bronze rod. Inset photo shows 5/64" build-up on undersize castings, done with same No. 310 torch but with No. 5 type 4 nozzle and VICTOR No. 6 square cast iron rod.

VICTOR'S wider work range pays off from the day you select your first VICTOR welding outfit on through a lifetime of reliable service. You buy the torch you need for your present work, add extensions, cutting attachments or special nozzles as they're needed. Result: top-quality equipment that's always perfectly matched to your needs!

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The Place For
VANADIUM

Out of the realm of speculation, vanadium's capabilities as an alloy are still impressive. But thorough analysis is essential to proper selection of applications

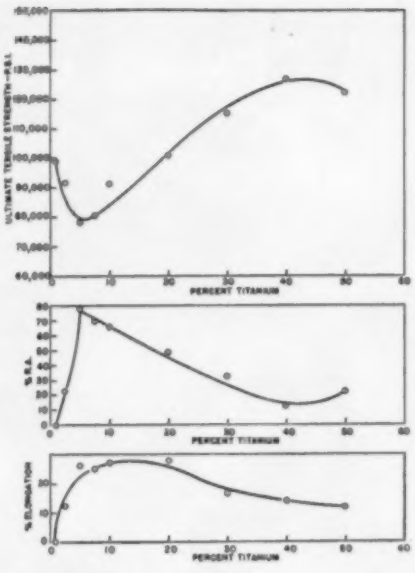

Fig. 1

SEVERAL years ago, much speculative thought had been given to vanadium because of its desirable properties, such as light weight, corrosion resistance, abundance and high strength-weight ratio.

At present, principal uses include ferrovanadium (containing 30 to 60 per cent vanadium) for alloy and tool steels, dental alloys with Au and V, the bronzes, aluminum alloys and beta stabilized titanium alloys. There are no major applications involving vanadium alloys where vanadium is the primary constituent.

Highest purity vanadium is produced by the iodide process, involving decomposition of vanadium iodide on a hot tungsten filament. However, iodide vanadium is expensive. The calcium-reduced material is of sufficiently high purity for research purposes, and is considerably cheaper. A more recent reduction method, called the alumino-thermic reduction process now allows the purchase of vanadium at about one-fourth its former cost. But a higher impurity level and an Al content of about 14 per cent must be tolerated in this instance.

Research—Significant research to produce vanadium-base alloys has occurred under government sponsorship. For the past 2½ years, the Air Force has contracted with Armour Research Foundation, Illinois Institute of Technology, to explore the feasibility of vanadium as a base metal in alloys for aircraft and guided missiles.

As a result, the promising alloys have been evaluated on the basis of room temperature, ductility and strength, forgeability, elevated temperature characteristics, and creep resistance.

Strength, Ductility—It was determined that the V-Ti and V-Zr systems were the only promising

PROPERTIES OF VANADIUM

	IODIDE VANADIUM PROPERITES	CALCIUM REDUCED VANADIUM PROPERTIES
Modulus (E)	20.1 x 10^6	19.7 x 10^6
Prop. Limit	12,200 psi	———
Yield Strength (at 0.2% offset)	16,700 psi	49,100 psi
Ult. Strength	31,600 psi	53,000 psi
Elong. (1")	17%	6%
% Red. in Area	75%	2.4%
Hardness (VHN)	64	143
Density	6.0	6.0
Modulus-to-Density Ratio (E/D)	3.35	3.28
Melting Point	1900° ±5°C	———
Atomic Wt.	50.95 (Titanium 47.90)	———

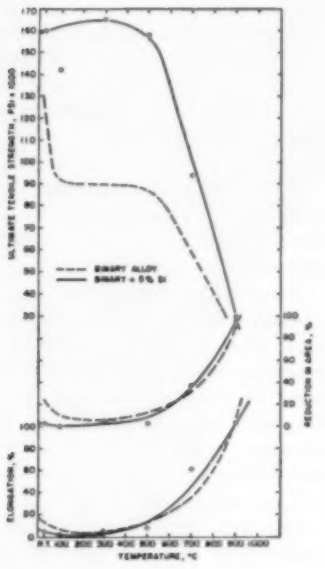

Fig. 2

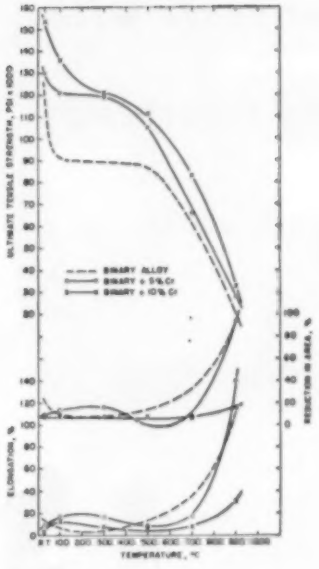

Fig. 3

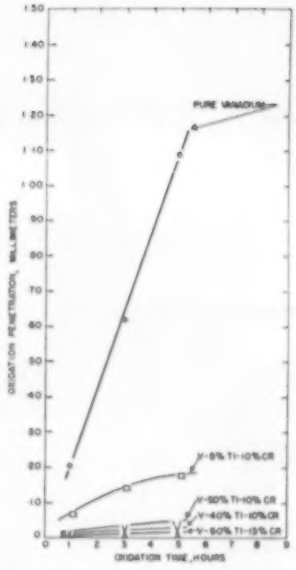

Fig. 4

ones, on the basis of room temperature, strength and ductility. Solid solubility of Zr in vanadium is less than 3 per cent; Ti and V show solid solution behavior at all compositions. Ultimately, alloy development work was based on vanadium titanium alloys because of low solubility and embrittlement encountered at moderately high zirconium contents.

Pure vanadium is very ductile and can be cold-rolled 90 per cent without annealing between roll passes. The unalloyed metal work-hardens rather slowly. Addition of less than 1 per cent Ti causes strengthening, but unusual embrittlement. Between 1 and 5 per cent Ti, ultimate strength level drops to about 80,000, but a marked improvement in ductility is noted. From 5 to 40 per cent Ti, strength increases gradually to 125,000 psi, but ductility correspondingly decreases (see Fig. 1).

Strengtheners — Ternary alloys of the V-Ti-X type were investigated with up to 15 per cent third element. Most fruitful ternary additions seem to be Si, Cr and Al. Si is the most pronounced strengthener, while Al and Cr have about the same strengthening capacities. Generally, comparatively small additions of a third component can raise the strength of V-Ti alloys to the 160,000-psi level without loss in ductility (see Figs. 2 and 3).

Carbon, in small quantities (less than 1 per cent) in the ternary alloys has no appreciable strengthening effect, but room temperature strength - ductility relationships are enhanced.

Unlike titanium, aluminum and copper, vanadium cannot be heat treated to produce various strength levels. There is no useful allotropic modification of this metal which would enable a coherency or precipitation-type age hardening reaction. Vanadium strengthening or hardening likely will be effected by simple solid solution hardening, or dispersion hardening by an insoluble phase.

High Temperatures — From a strength-ductility relationship, vanadium-base alloys appear superior to titanium-base alloys at elevated temperatures. A V-20 Ti alloy shows an ultimate strength of 51,000 at 900° C (1653° F); at the same temperature, a V-20 Ti-5 Cr alloy has its ultimate strength level increased to 56,000. Unfortunately, at elevated temperatures oxidation becomes serious.

At 675° C, V_2O_5 forms, which practically nucleates a chain reaction for subsequent oxidation and contamination of the alloy below the oxide surface. By adding alloying elements to pure vanadium, it is possible to raise the melting point of the oxide to 900° C. But the oxidation cannot be circumvented because of forgeability limitations. If enough alloying element or elements are added to raise the melting point of the pentoxide substantially, forging characteristics are lost.

Cr and Al have been most effective in increasing vanadium's oxidation resistance. Fig. 4 shows effect of alloying elements on the oxidation resistance of pure vanadium. Surface treatments such as diffusion coatings and depositions to increase usefulness of vanadium alloys at elevated temperatures are being tested.

Forgeability — Forging characteristics of vanadium-base alloys are important, because the as-cast, arc-melted ingots are predominant-

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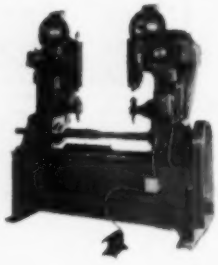

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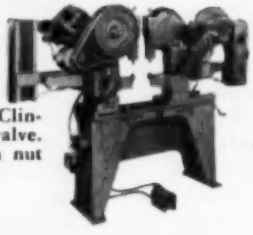

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Write for Clinchor bulletin 847; Rivitor bulletins 646 and 847. The Tomkins-Johnson Co., Jackson, Mich.

37 YEARS EXPERIENCE T-J

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RIVITORS AIR AND HYDRAULIC CYLINDERS CUTTERS CLINCHORS

ly a chill cast, columnar grain structure and must be broken up. With exception of the V-Ti alloys, it appears that the desirable binary forging alloys are those with less than 10 per cent alloying element.

Some alloys containing more than 10 per cent alloying element can be forged, but with considerable difficulty.

Forging temperatures for vanadium-base alloys are unusually high—from 1150 to 1450° C, depending on the alloy. Even though some of the alloys are considered forgeable on the basis of their relative ease in forging, final forged ingot or bar is likely to be full of seams and voids.

Through recent work, it has been determined that addition of small percentages of carbon (less than 1.5 per cent) improves the forgeability of some alloys. In all cases, scalping is necessary after forging to remove oxide scale.

Machinability—Vanadium alloys are difficult to machine. At present, it is likely that imperfect machining techniques are used for these alloys. Machinists claim that vanadium alloys, high in alloy content, are much more difficult to machine than high alloy titanium.

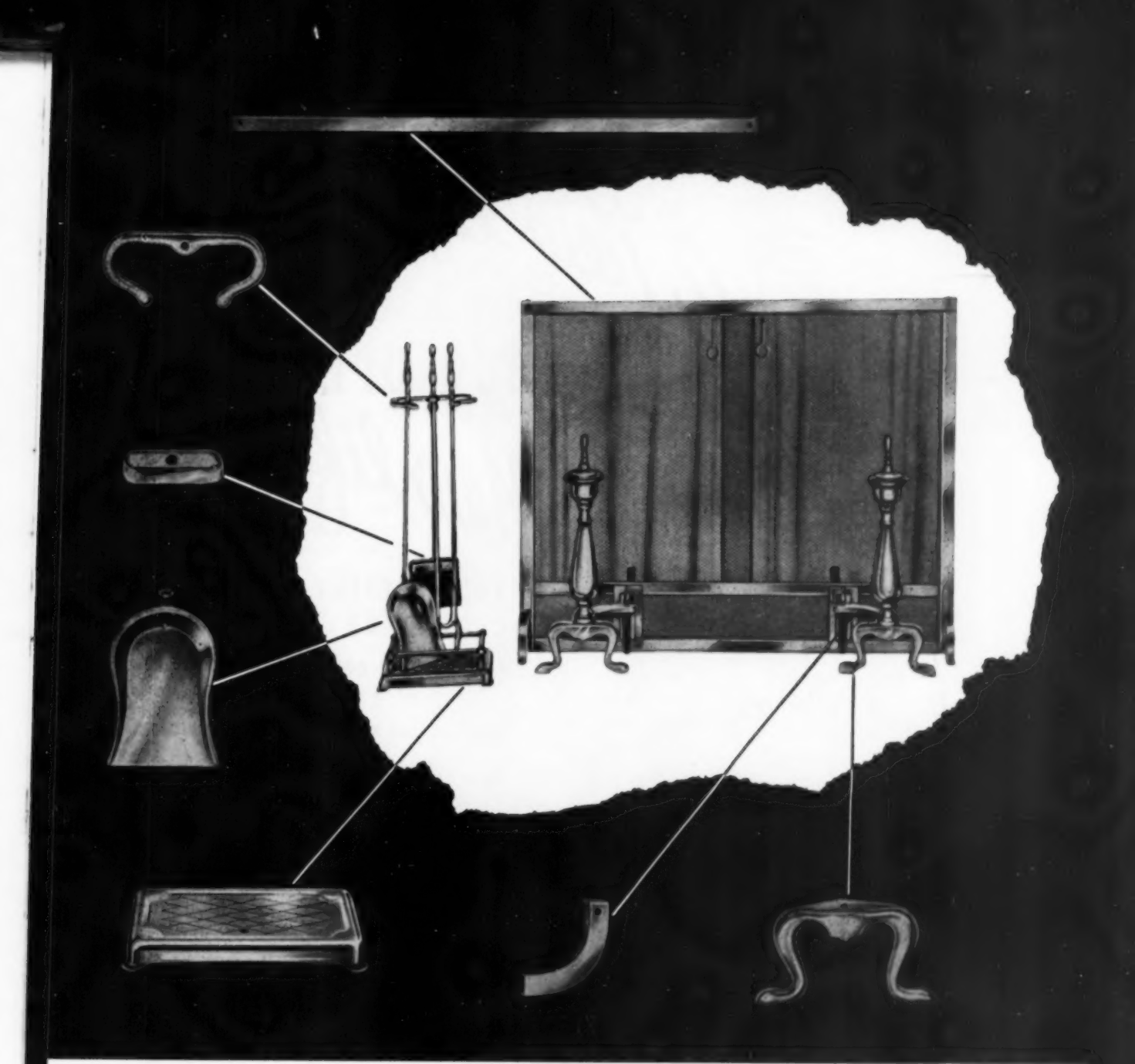
Experience indicates that true centers are difficult to maintain while turning. For threading, grinding must be used.

Creep Behavior—Presently, only limited information exists on the creep behavior of vanadium alloys.

Some consideration has been advanced that creep resistance can be increased by introducing a dispersed phase. A V-40 Ti-5 Al alloy at 500° C shows a nearly horizontal creep curve at a stress level of 100,000 psi. Stress-rupture data indicate that from room temperature to 675° C, vanadium-base alloys can be competitive.

On the basis of a strength-to-weight ratio, even titanium alloys are inferior to vanadium alloys. Above 700° C, in stress-to-rupture tests, the 100-hour strength of better vanadium alloys drops off rapidly.

However, most recent developments indicate that small carbon additions affect elevated temperature stress-rupture behavior favorably.



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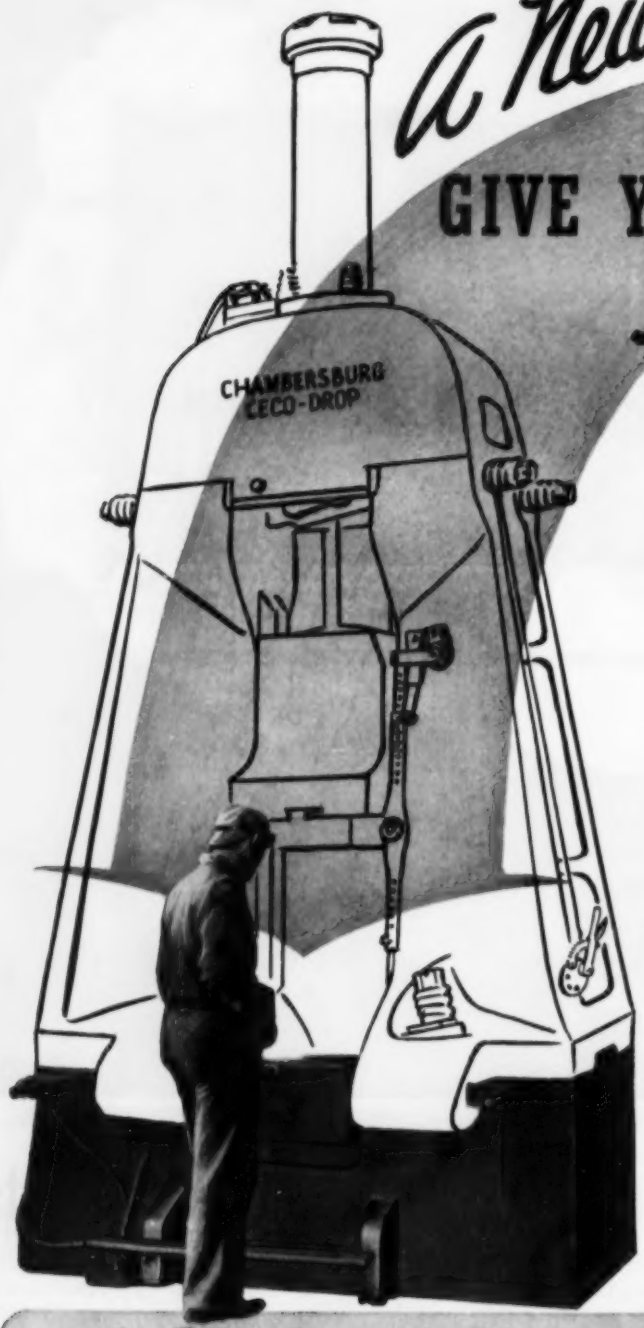

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"FORGING IN MID-AIR"

Carbide Drive Shaft Tool

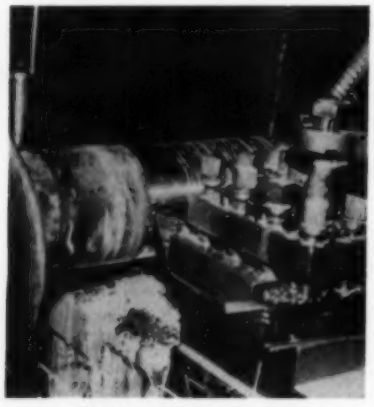
HEAVY-DUTY STEEL CUTTING operations on AISI 1035 steel drive roller shafts was, until recently, one of the most troublesome production problems at Thew Shovel Co. They solved the problem by using a different grade cemented carbide cutting tool.

New Grade—The cemented carbide tool now employed is Carboloy grade 370, developed recently by Carboloy Department of General Electric Co. It is intended for heavy-duty steel cutting operations.

The heart of the company's crawler unit that carries power shovels, cranes and other heavy equipment, the drive roller shaft, furnishes power to the treads. The part is machined from a rough, heavily scaled, hot-rolled forging of high carbon steel (AISI 1035—42 carbon or better) 2 feet long with 5½-inch outside diameter. Depth of cut is ½ inch, feed 0.020 inch and speed 168 rpm. Job is done on a 48-inch flat bed horizontal lathe.

Before, After—Even though carbide tooling had been in use, cratering was excessive, tool life was poor and regrinding was necessary after a maximum production of eight to nine shafts.

Machining time now has been cut 25 per cent as feed was stepped up from 0.020 to 0.025 inch. About 11 to 12 pieces are turned out before the tool shows even a normal wear land. And there is no sign of cratering, the defect that formerly sent tools to the scrap heap long before their time.



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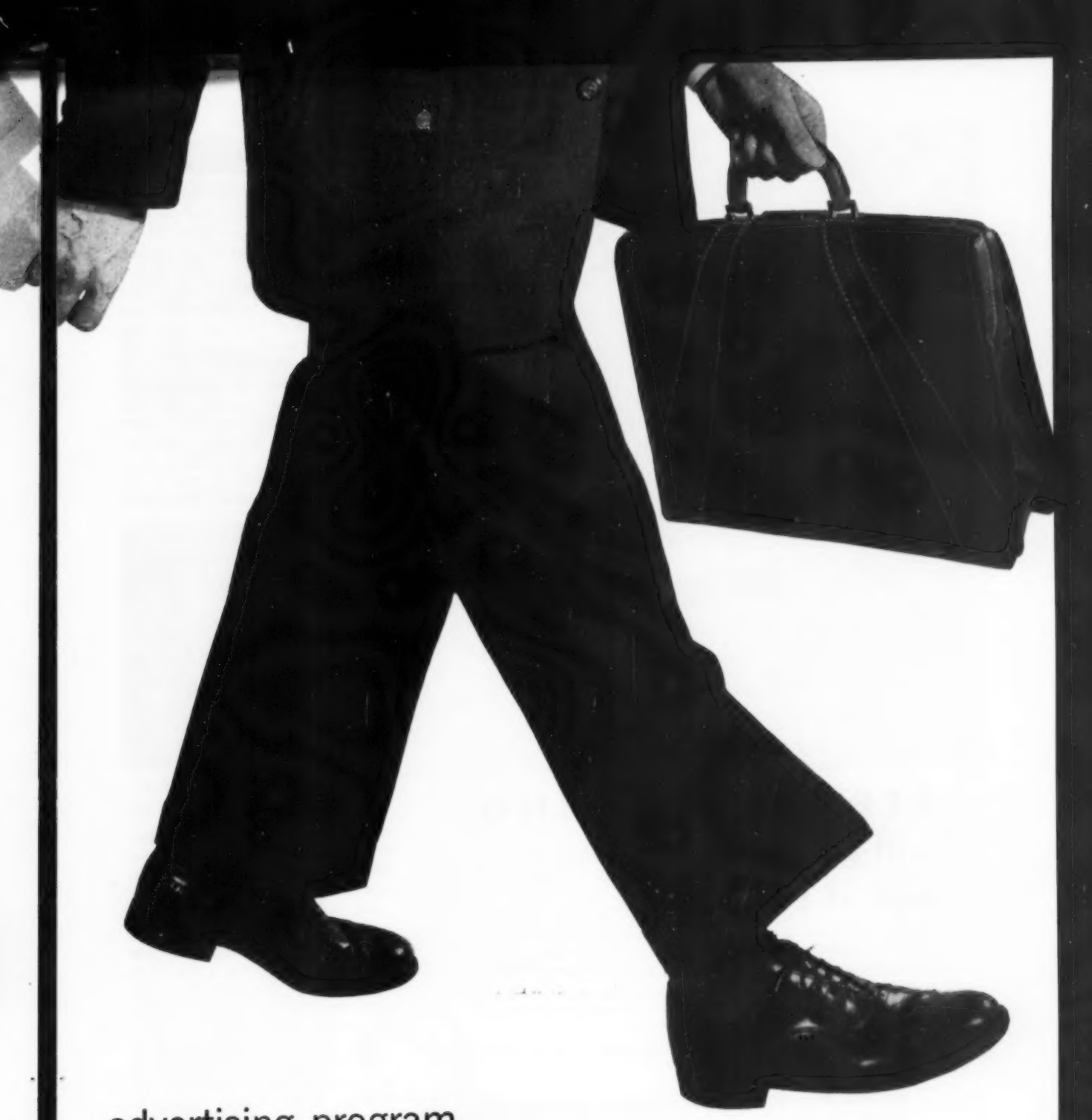

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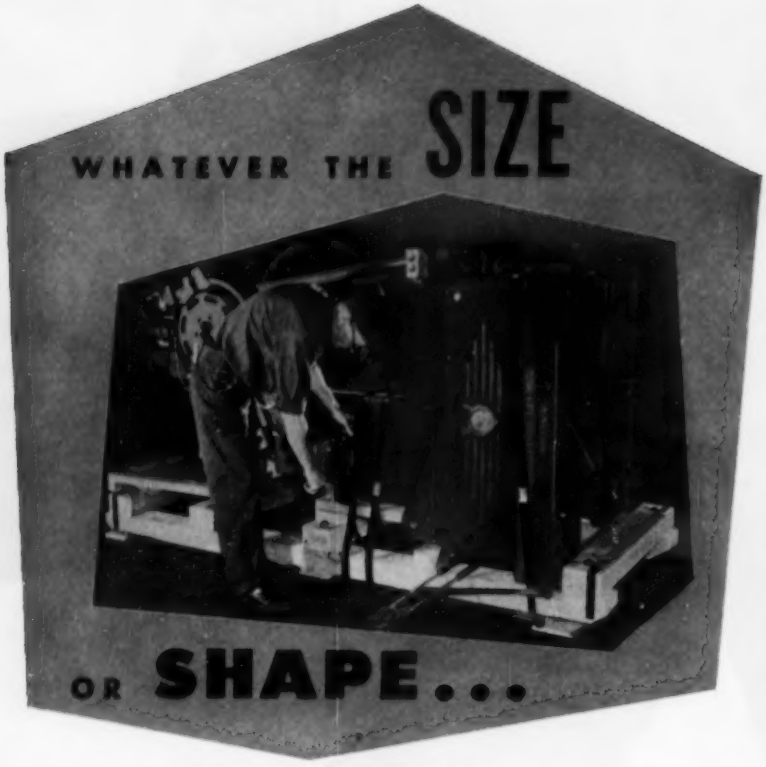

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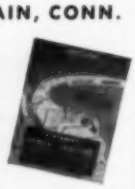

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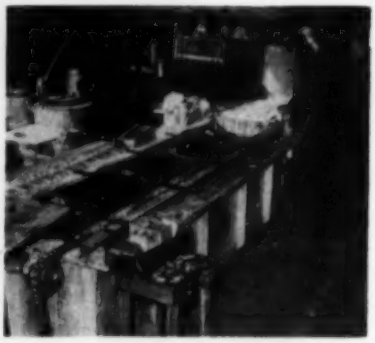
STANLEY STEEL STRAPPING • STANLEY STEEL

Austempered Shaver Head

AUSTEMPERING electric shaver heads at Schick Inc. has resulted in an annual savings of $50,000 by holding rejects to a minimum. Processing approximately 30,000 pieces per day with rejects due to cracks held to less than five-hundredths of one per cent, the line is estimated to have paid for itself in 3 to 4 months.

No Distortion Allowed—Shaver heads, the outer head 0.003 inch thick and the inner head 0.006 inch thick, are stamped from special high carbon steel. The outer head has 128 slots in the ¼ by 1⅛-inch cutting plane. With such



ELECTRIC SALT BATH FURNACE
. . . works over 30,000 heads per day

delicate shapes, distortion cannot be tolerated, since the inner head oscillates 20,000 times per minute in contact with the outer head.

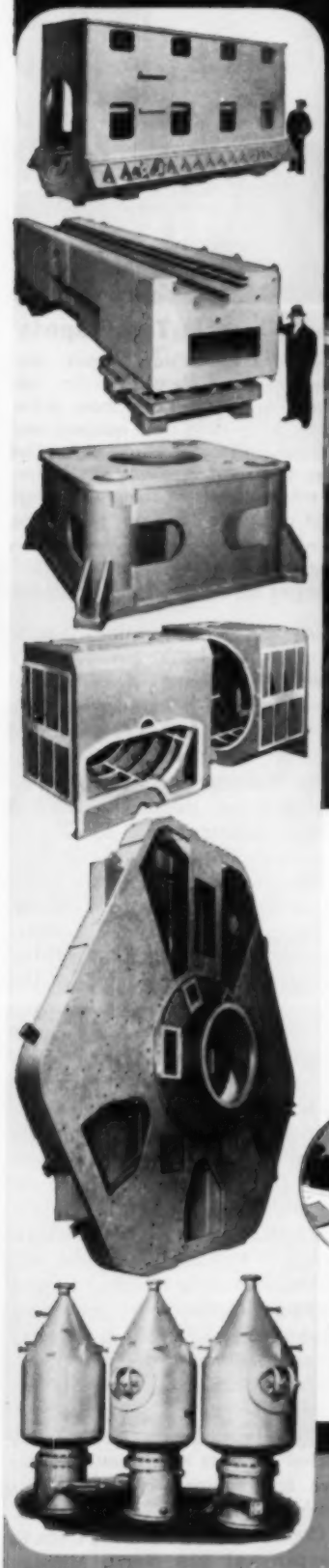
To hold distoriton and hardness within closer limits, reduce rejects due to cracking, increase ductility of the heads and streamline material handling, the company installed a salt bath isothermal quenching furnace.

This 60-kw furnace produced by Ajax Electric Co. has working dimensions 10 feet long by 2 feet wide by 22 inches deep. It was installed between the austenitizing bath and the rinse tank.

Work Cycle—The new cycle for austempering heads comprises a 5-minute preheat, 5-minute immersion in a 1550°F austenitizing bath, 1½ hours in the isothermal quenching furnace at 550°F, followed by a cold water wash.

In addition to reducing cracks and effecting the aforementioned savings, distortion is easily held with limits. Six processing operations have been eliminated, and hardness is uniform R15N 86-88.

Steel-Weld FABRICATION



Use WELDED STEEL for Greater Strength with Less Weight!

The Crawler Side Frames illustrated above, parts of a large strip mining machine which were formerly produced in casting form, were redesigned and produced by Mahon as weldments. These and the parts and assemblies shown at the left are typical of thousands of Steel-Weld Fabricated units produced and machined by Mahon for hundreds of manufacturers of processing machinery, machine tools and other types of heavy mechanical equipment. If you require welded steel parts, assemblies, or special purpose equipment, you can turn to Mahon with complete confidence . . . highly skilled personnel are available within the Mahon organization to do the complete job from drawing board to finished machining and assembly—thoroughly experienced personnel who are backed by tools and plant facilities with capacity to produce virtually anything in welded steel construction regardless of size or weight. You will find in the Mahon organization a unique source for Steel-Weld Fabrication . . . a source where skillful designing, advanced fabricating techniques and superior craftsmanship assures you a smoother, finer appearing job embodying every advantage of Steel-Weld Fabrication. See Mahon's Insert in Sweet's Product Design File, or have a Mahon engineer call and give you complete information.

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Engineers and Fabricators of Steel in Any Form for Any Purpose

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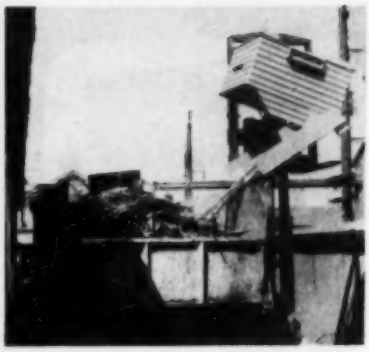

Box Dumps in Tight Spots

These corrugated steel boxes, designed by Union Metal Mfg. Co., can be drop-bottom dumped from either side or the back in close quarters and at any angle from a narrow aisle. The boxes feed and receive parts. They are safely tiered for compact storage or set on stands for work positioning

---

Forming and Bending Aluminum

Forming and Bending Kaiser Aluminum, a book published by Kaiser Aluminum & Chemical Sales Inc., has a five-way appeal. It's the type you'd recommend as required reading for newcomers in the forming and bending business, but this doesn't mean that it's too elementary for those with experience in the field. Of particular interest to the latter group is that it is written with three different audiences in mind—management, engineers and production men.

Management is given comparative material on different types of forming equipment; engineers are offered specific data on characteristics of the material that influence design; and production personnel will find the necessary details for practical forming and bending procedures.

Specifically, the subjects covered include: Forming aluminum with hydraulic and mechanical presses, bending aluminum with power and hand-operated bending brakes, forming aluminum in rubber, roll forming aluminum, spinning aluminum, bending aluminum pipe and tube with power and hand-operated bending machines, and tensive and compressive forming of aluminum.

Copies may be obtained from the company at 919 North Michigan Blvd., Chicago 11, Ill.

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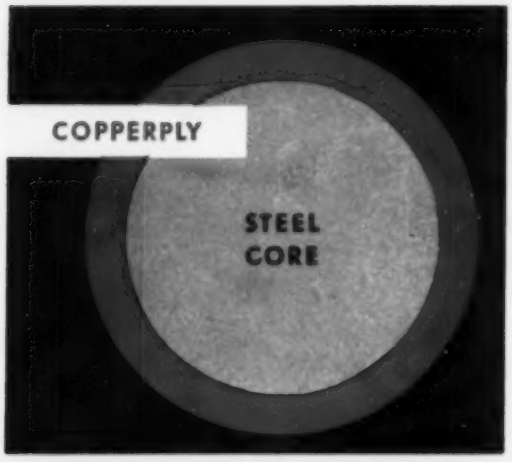
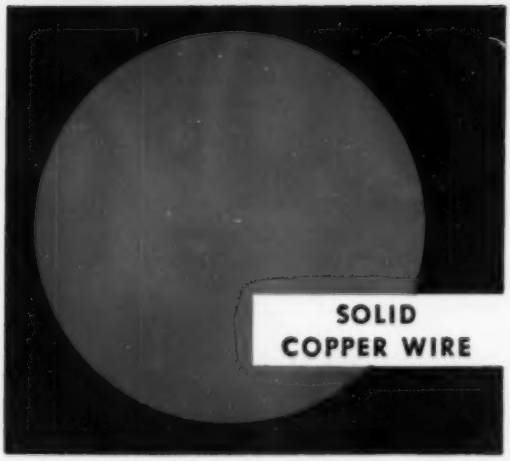
OF UNMATCHED NATIONAL-STANDARD QUALITY





COPPERPLY, accurately concentric and uniform, is steel wire electroplated with copper to the thickness required. This type wire was originally used for television lead-in installations. Now this unique wire is solving cost problems in many new applications.

Maybe COPPERPLY gives you ideas for applications in your field . . . uses that will result in substantial savings over solid copper wire.

In addition to cutting costs, COPPERPLY obviously is much stronger than copper wire. And National-Standard makes it with a regular or high tensile steel wire core to fill your specific requirements.

We'll "loan" you an engineer to help you develop any ideas for using COPPERPLY you'd like to explore. It's company policy to give the best service in the industry, in addition to the highest quality special wire and steel products available. Write the National-Standard Company, Niles, Michigan, concerning COPPERPLY. Write the appropriate division listed below on other products.

DIVISIONS OF
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Athenia Steel, Clifton, N. J.
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Reynolds Wire, Dixon, Illinois
Industrial Wire Cloth

Wagner Litho Machinery, Jersey City, N. J.
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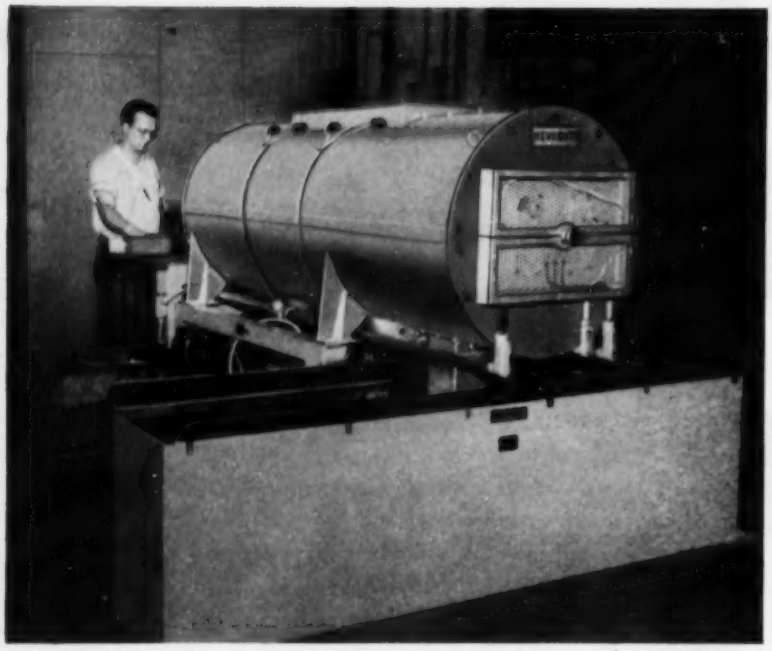
Worcester Wire Works, Worcester, Mass.
Round and Shaped Steel Wire. Small Sizes

IBM Cuts Heat Treating Costs Eliminates Secondary Operations With Hevi Duty Shaker Hearth Furnaces



At **IBM's** Endicott Plant, one year's saving in labor and material amounted to approximately twice the original cost of this modern production tool.

Low Cost Raw Materials — now a less expensive carbon steel can be substituted for alloys which also means easier and faster machining and longer die life.

Clean Finish — cleaning costs are greatly reduced since only degreasing is required. An atmosphere protects the parts so they remain bright and scale free from the time they enter the furnace until they are withdrawn from the quench.

Labor Costs — the easy automatic operation of this furnace enables unskilled labor to increase production per man hour. Heavy manual labor is lessened. Fixing or stringing parts on wire is eliminated. Now, parts fed from a hopper, or placed onto the hearth plate, move through the heating zone and drop into the quench.

Improved Working Conditions — the clean, safe, and quiet operation of an electric furnace betters employee relations. The problem of cyanide waste disposal is eliminated.

These furnaces have paid for themselves while improving the mechanical properties of the product. Write for Bulletin HD-850 and the answers to your small parts heat treating problems.

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DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS

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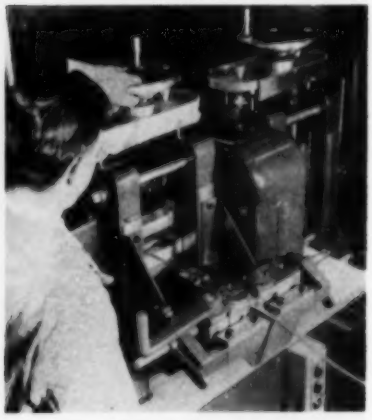
Three-In-One Mill Machine

Experimental machine is solving handling problem for industrial laboratory.

A ONE-MACHINE STRIP, rod and wire mill is saving valuable production mill time as well as expanding the metallurgical research facilities of the laboratory, according to officials of the Research Laboratory of General Cable Corp.

Mill Design—This experimental mill was designed by engineers of Stanat Mfg. Co. as a combination of three different machines: Standard 4 by 6 3-high strip mill; 4 by 6 2-high rod mill; 16-inch diameter bull block for drawing wire. By mounting the strip mill, rod



STRIP, ROD AND WIRE MILL
. . . all in one machine for research

mill and bull block on a single stand, maximum utilization of space and manufacturing economy is achieved.

Another feature of the mill is a set of vertical edging rolls mounted on the strip mill portion of the machine for conditioning stock edges.

Handles Hot Rods — The mill handles experimental ingot, rod, round and flat wire, solving a basic problem common in many industrial laboratories. Heretofore, whenever an experimental ingot was handled, or a pilot run of a new metal or alloy was made, it was necessary for laboratory personnel to use actual production equipment in the plant.

This interfered with production and usually meant a costly tie-up in large sections of the plant. The Stanat combination mill offers a practical solution to this problem.

combined

in this basic modern material:

— beauty

— economy

— strength

— practicality

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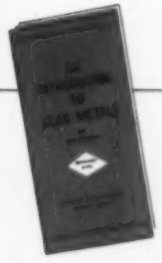
CLAD METAL

MOULDINGS of SuVeneer Copper or Brass Clad Metal exemplify *beauty and utility* in every application . . . mirror-bright, or satin-finished for rich color, as in the table-top sections pictured here. • You benefit by lower cost, higher strength, standard ease of fabrication. *Write!*



Ask for your copy of our widely-read publication, "An Introduction to Clad Metals," free on request.

Superior Steel

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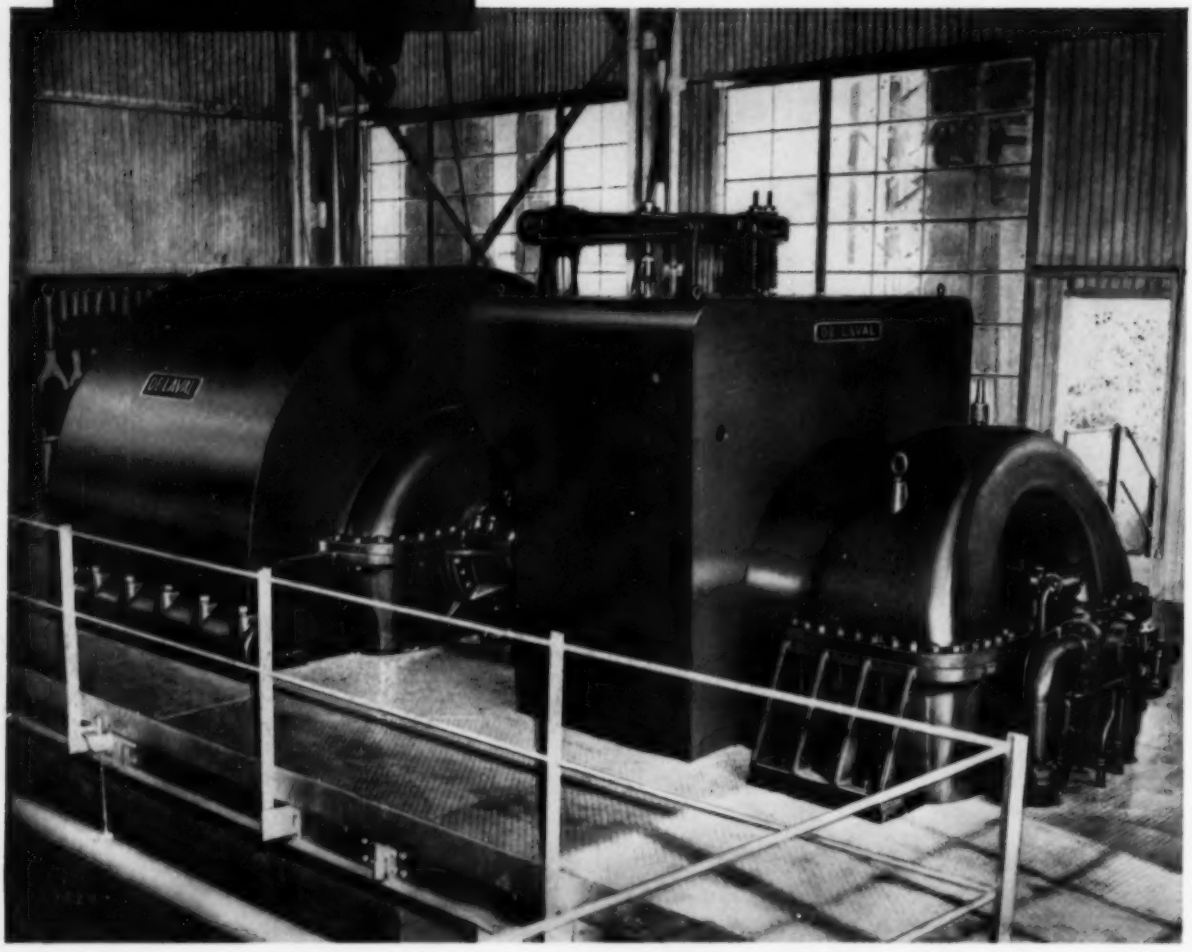
DE LAVAL CENTRIFUGAL BLOWER

delivers 75,000 cfm for southern steel mill



This De Laval 75,000 cfm blast furnace blower in a southern steel mill is driven by a 9,450 hp De Laval turbine operating at 2,900 rpm. Discharge pressure of the blower is 35 psig.

De Laval blowers have what it takes to give long service. The rugged casings and sturdy, perfectly balanced rotors are built to take punishment. The pressure lubricated sleeve bearings and Kingsbury type thrust bearing add durability and reduce maintenance. Both the turbine and blower are De Laval-designed and De Laval-made for top performance.

De Laval centrifugal blowers and compressors are built in single and multi-stage types to supply air in volumes up to 150,000 cfm for all classes of service in steel, gas and coke plants. The wealth of application experience acquired by De Laval over the years assures a correct and economical solution to your blower problem. Consult your De Laval Sales Engineer.

DE LAVAL *Centrifugal Blowers*

DE LAVAL STEAM TURBINE COMPANY

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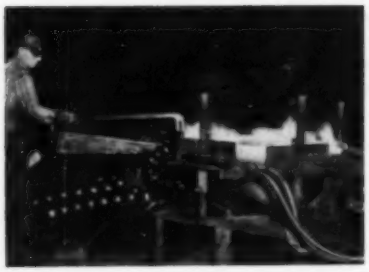

Stress Relieved Gas Caps

Problem of turning out a cold-worked dome-shaped gas cap, in which the hardened area along the rim which might produce cracks would be eliminated, was solved at Lukens Steel Co. by stress relieving the rims

Limited Area Palletized

PROBLEM PALLETIZING has been solved by Brainard Steel Division of Sharon Steel Corp. A pallet-rack system, which increases storage space at little additional cost, does the trick.

Frequently, palletizing in a restricted storage area presents a problem. When lightweight containers are stored on pallets, or if the load is particularly heavy or irregular in shape, pallets cannot be stored properly without crushing or damaging the product.

Pallet Rack Solution—Most simple of the solutions devised yet is the use of pallet racks, with an individual rack for each pallet that can be easily loaded or unloaded with a fork truck.

The Brainard system is built around one basic part —a tubular steel frame. Shelving bars and connectors provide a slip-fit connection between frames. Two men can easily assemble the rack using an ordinary wrench for fastening cross braces.

Pallets High—Racks can be erected two, three or four pallets high, as high as a lift truck will reach, and extended indefinitely in length. Each section is independently adjustable. All types of pallet requirements can be met with various arrangements of the basic sections.

Racks are available with pallet depths of 36, 42, 48, 54 and 60 inches. Width between racks varies from 36 to 120 inches, with height between shelves any multiple of one foot.

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Whether it's for a pressure, mechanical, sanitary or ornamental use – Standard offers you a convenient "one source" answer to your welded Stainless Steel Tubing need.

TUBE SIZES: ¼" to 4" OD .025 to .148

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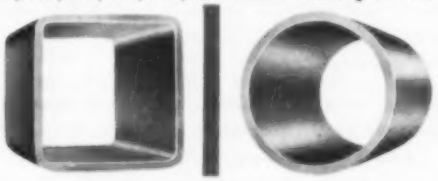

PIPE SIZES: ⅛" to 4" IPS Schedules 5 & 10

Send for Stainless Folder! Our engineers will gladly assist you in your selection of the tube best suited to your needs! Write today!

Specify Standard for

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Thoroughly experienced in producing forgings with proper grain flow for maximum strength . . . pioneers in forging the new wonder metal, titanium . . . Consolidated is your ideal source for ***modern*** forgings. Available to you are our complete and up-to-the-minute facilities including a new die shop provided with the latest die-sinking machines. Modern quality control methods are employed throughout, and skilled personnel provide unequalled forging know-how.

For forgings in aluminum, titanium, alloy steel and many other metals, Consolidated is set up to serve you; write today for complete information.

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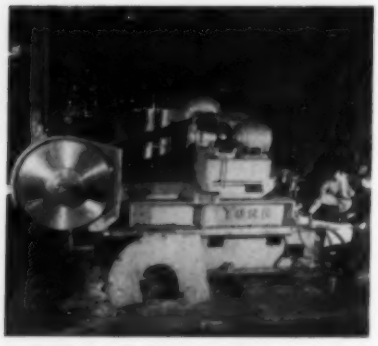
Two-Cut Hot Saw

HOT SAWS are not new, but one that will do both drop type and cross-cut type cutting is.

York-Gillespie Mfg. Co. has designed and built a hot saw whose blade can be fed vertically or horizontally and one which will cut two 7 x 7 billets in approximately nine seconds.

Another important feature of the saw is that through hydraulic controls the full horsepower of the motor can be used at all times in sawing or cutting steel since the feed of the saw blade is controlled.

Thru Thick Or Thin—If the saw is cutting through a relatively thin-walled material, it will cut it at a speed that will fully utilize the total horsepower. If it is cutting through a thick-walled material, the feed is automatically

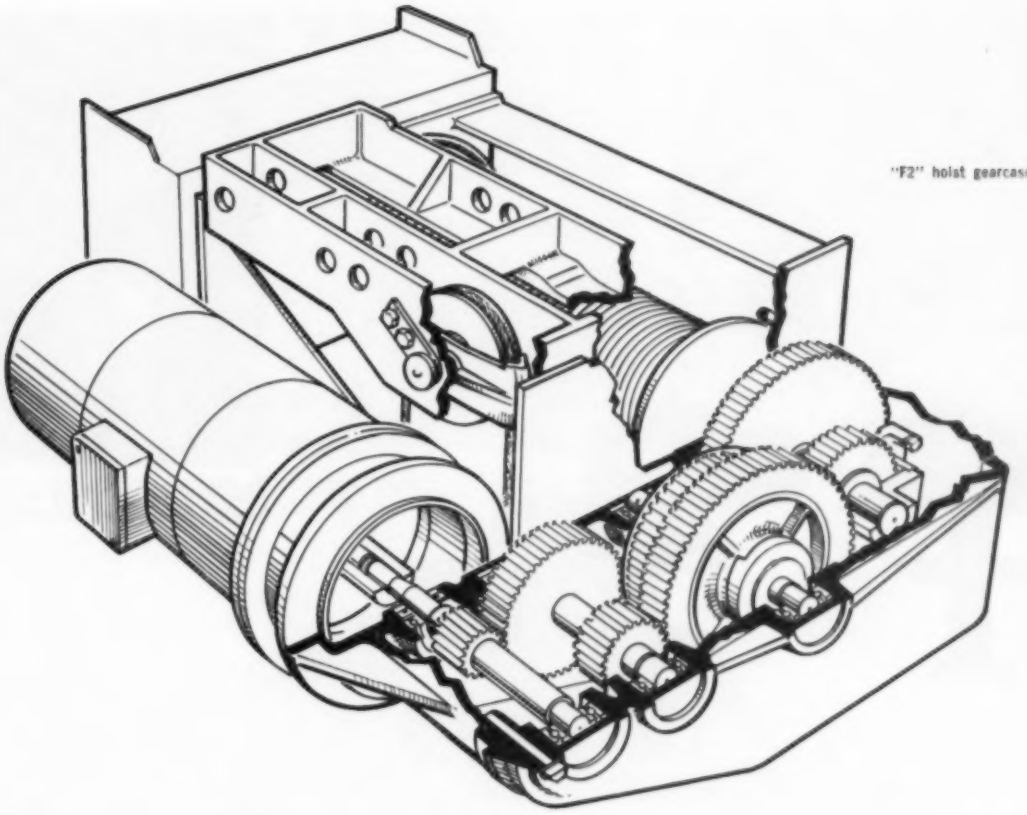


DROP, CROSS-CUT HOT SAW
. . . fully utilizes total horsepower

cut down so the unit will not stall, but again utilize the full horsepower.

This is extremely important in cutting structural and various steel shapes. For example, in cutting an H beam, the saw can travel quite fast through the flange, but when it reaches the web, a great deal thicker material must be cut. Therefore the feed automatically slows down.

Drive—The saw is driven by a 150-hp, 1200-rpm motor. The motor shaft extension is mounted on a pair of 3-16/16-inch Dodge-Timken all-steel pillow blocks. The V-belt drive consists of 21 C-225 Dodge matched V-belts. The motor pulley is 17-inch pitch diameter and the saw pulley 12-inch pitch diameter.



"F2" hoist gearcase

guts FOR ACTION

Robbins & Myers *F* hoists are built with guts for action – not an ounce of fat or extra frill inside – engineered simplicity that cuts downtime losses to zero. Search for cheap materials? Not here – Buy only the best – make parts precisely for the job. That's the procedure at R&M that saves you the high cost of compromise!

Result – the *F* hoist – the hoist with guts for today's competitive pace – the hoist that carries full loads all day – day after day, month after month. Long years after you've written it off, your *F* hoist will be pulling for you. *Capacities:* 1,000 to 20,000 lbs. *Hoist Speeds:* From 10 to 54 f.p.m. *Standard Lift:* From 16 to 40 feet. *Control:* Push button or Pendent Rope. *Mounting:* Lug, push or hand geared trolleys, or choice of long or short radius powered trolleys.

Two-ton "F2" hoist with motor driven trolley

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SPRINGFIELD, OHIO BRANTFORD, ONT.

VENTILATORS MOYNO PUMPS HOISTS CRANES MOTORS FANS

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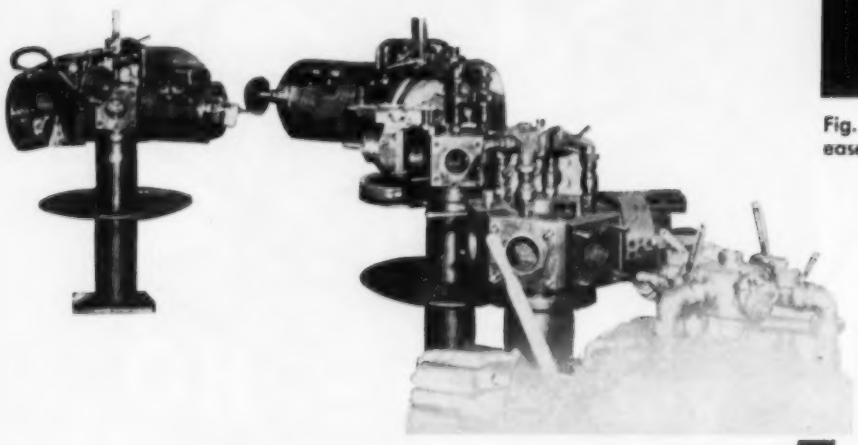
clip
staple to letterhead
add name and title

Have representative call ☐
Send F Bulletin No. 801-C ☐
Send trolley Bulletin No. 805-A ☐
Send 2-speed hoist Bulletin No. 880 ☐

Fig. 2—Pipe handling rack (background) eases loading, unloading heavy piece

Fig. 1—Spare turrets are kept in a storage area. They are mounted on stands to facilitate tool maintenance



Turret Change

Instead of changing tools on their turret lathes, this company is making a complete change — turrets and all. Result is shorter setup time plus easier tool maintenance

INTERCHANGEABLE hexagon turrets have speeded up our production of seamless drill pipe and line casing up to 9⅝-inch diameter.

Heavy tooling required for this job formerly meant a time-consuming change in individual tools when the setup was made for a run of a different-size pipe.

Complete Switch — Changeover time has been cut from about 12 to 16 hours down to 2 hours. We now replace the completely-tooled turret, rather than just the tools. Also, tooling can be maintained more easily under present system.

A full time tool setter is kept busy making setups and replacing worn tools for the 14 machines in this installation. This job is simplified because turrets are placed on convenient waist-high stands when not in use. Close tolerances are specified for the finished pipe and rejections have been reduced since the improved tool maintenance program began.

Here's Why—Decision to operate this machining setup with multiple turrets was based on two considerations. First, many sizes of Double Seal, Shrink Thread drill pipe and Extreme Line Casing must be machined in this department, and the required tools are heavy. Second, close tolererances require carefully maintained tooling.

Machines—Standard Gisholt 4L turret lathes with 10½-inch spindle openings were adapted for this operation. Each lathe is equipped with a fixed-center hexagon turret carriage from which all machining operations are performed. A six-jaw, hydraulically operated chuck on the spindle nose, and a three-jaw, hydraulically operated chuck on the rear of the spindle, drive and support the casing or drill pipe.

Turrets are mounted on two preloaded precision tapered roller bearings. They are held to the saddle by a double bevel, large circumference clamping ring which applies the multiplied pressure of an easily operated self-locking cam. Combination of roller bearing design with positive, powerful clamping means that the turrets can be interchanged with no loss of accuracy in operation.

Cycle—A removable felt plug is inserted into the casing or drill

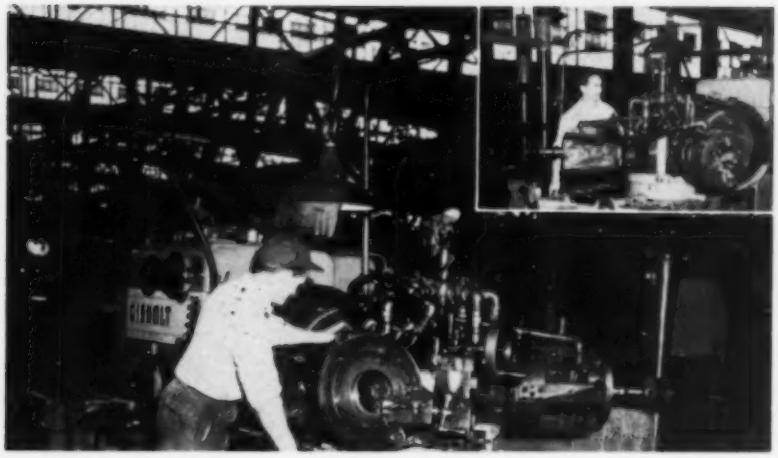
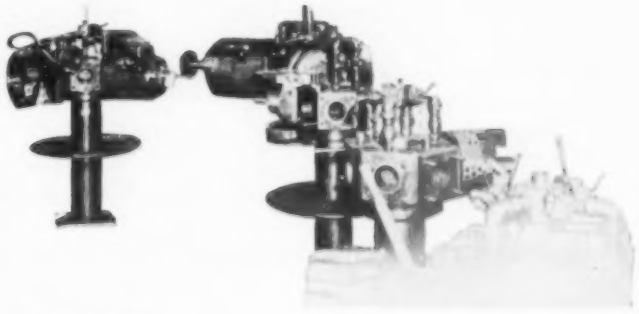


Fig. 3—Heavy tooling enhances system of changing complete turret. Rear view, inset, is self opening die head

Fig. 4—Turret assembly shows two preloaded roller bearings which simplify mounting, insure accurate realignment

Speeds Setup



By E. A. McKEE
Spang-Chalfant Division
National Supply Co.
Ambridge, Pa.

pipe at the beginning of the operation to prevent loss of coolant during machining. Tool head A in Fig. 2 does the machining on the male end, including turning the outside diameter, roughing the seal diameter, forming the taper for the thread, facing the end, and chamfering.

Internally tripped, self-opening die head, C, cuts the tapered, modified Acme thread. After the threads are cut, tool head B is used to finish the seal surface. When the machining is completed, the felt plug is removed. This automatically wipes out chips and remaining coolant from the pipe, thus reducing the cleaning required in the next operation.

Step by step machining of the female end of the casing is similar. Gisholt 4L fixed-center turret lathe used for this operation is a duplicate of the one used for the male end, except for tooling.

Opposed Machines—Work handling equipment devised for this department solved a difficult problem. Lengths of drill pipe and casing range up to 40 feet in length and must be finished at both ends.

Turret lathes are located about 50 feet apart. They're staggered, with headstocks facing. Machines on one side are tooled for finishing the male end of the casing and machines on the other side finish the female end. When machining the drill pipe, machines on both sides are used to finish male ends.

Loading Help—When casing enters the department, it is placed on a work handling table and moved along until it reaches a lathe. At this point, air powered elevating rollers raise the casing to the center height of the machine and convey it through the hollow spindle.

After chucking, a pair of support rollers are raised and the elevating rollers drop out of the way. This arrangement permits the lathe operator to load and unload his machine with little effort.

To assure smooth functioning of the machining sequence, the work handling table was designed to allow stockpiling upset casing ahead of the lathes. Production is about 40 pieces of completely machined casing each 8-hour shift per pair of machines.

...another BIG one!

Yes, it's a big one, but Consolidated builds them larger and also smaller.

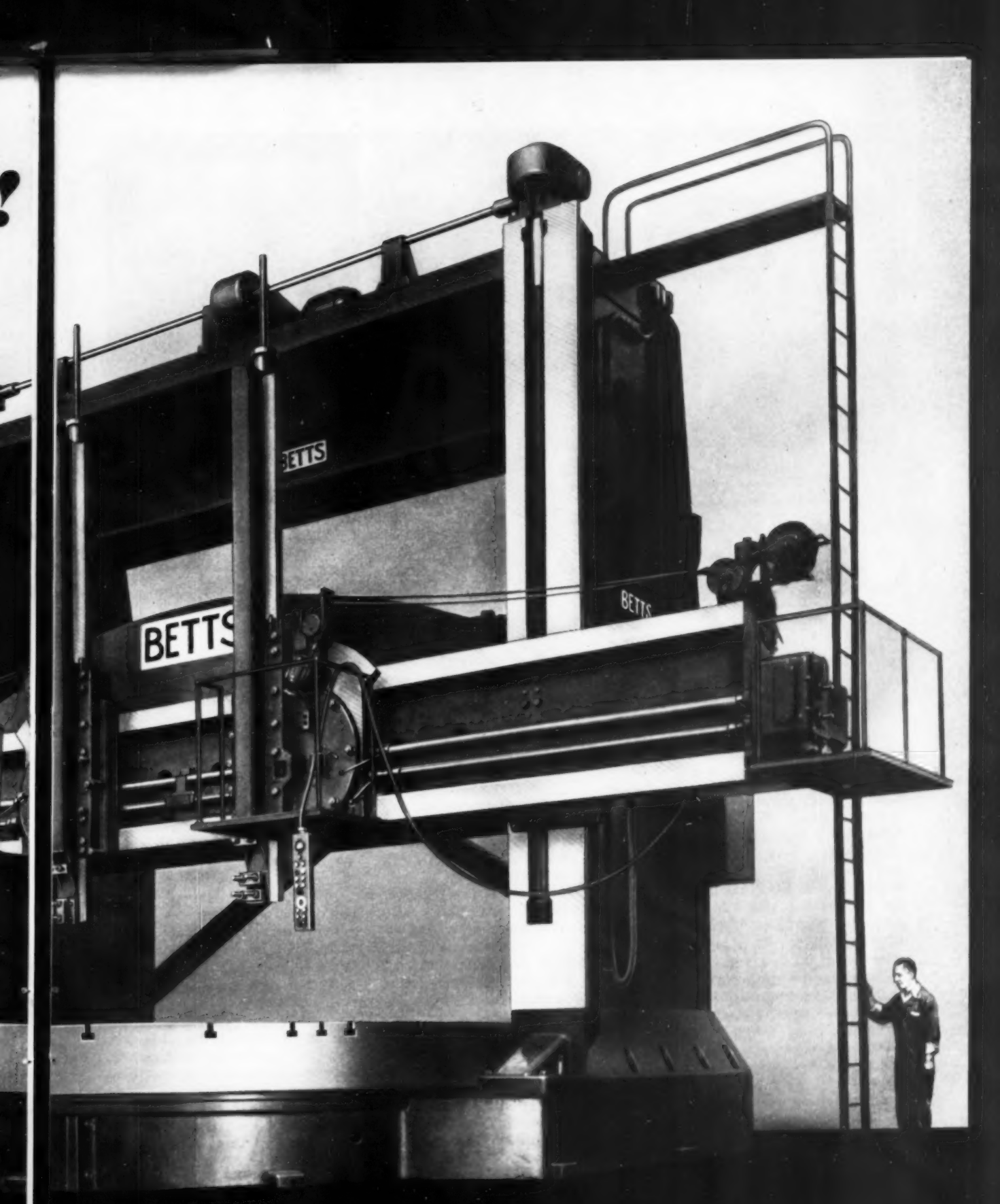
But more than bigness is the quality of the engineering thinking that goes into Consolidated Machine Tools. For example, on this 20 Foot BETTS Vertical Boring Mill, there isn't a single gear shift lever on the entire machine! Gear changing and all other operating functions are performed 100% from the pendant switches at the cutting tools.

In Consolidated Machine Tools you get tomorrow's engineering today!

BETTS 20-FOOT
VERTICAL BORING MILL

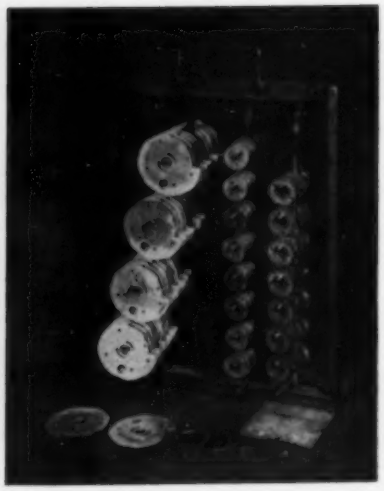
CONSOLIDATED MACHINE TOOL

Wholly owned subsidiary of Farrel-



CORPORATION, ROCHESTER, N. Y.

Birmingham Company, Incorporated



Baskets and boxes are solving the warpage problems during heat treating of small parts at IBM, by maintaining parts alignment during salt bath dips

CUT WARPAGE

In Heat Treating Small Parts

Special racks and baskets for limited-run batches are not expensive to make, and they eliminate wiring strings of parts. Uniform quality is another plus

MANY small parts produced in the Endicott, N. Y., plant of International Business Machines Corp. require heat treatment, but they have to be handled rapidly and in such fashion that uniformity is attained and warpage is avoided. Otherwise, labor charges are too high and scrap losses are excessive.

Parts vary widely in size and shape and, in most cases, quantities are too small for continuous furnaces. Other conditions necessitate batch treating, much of it in salt baths in Ajax electric furnaces. In these, dipping must be done with parts supported in such position that warpage is either avoided completely or is kept within narrow limits.

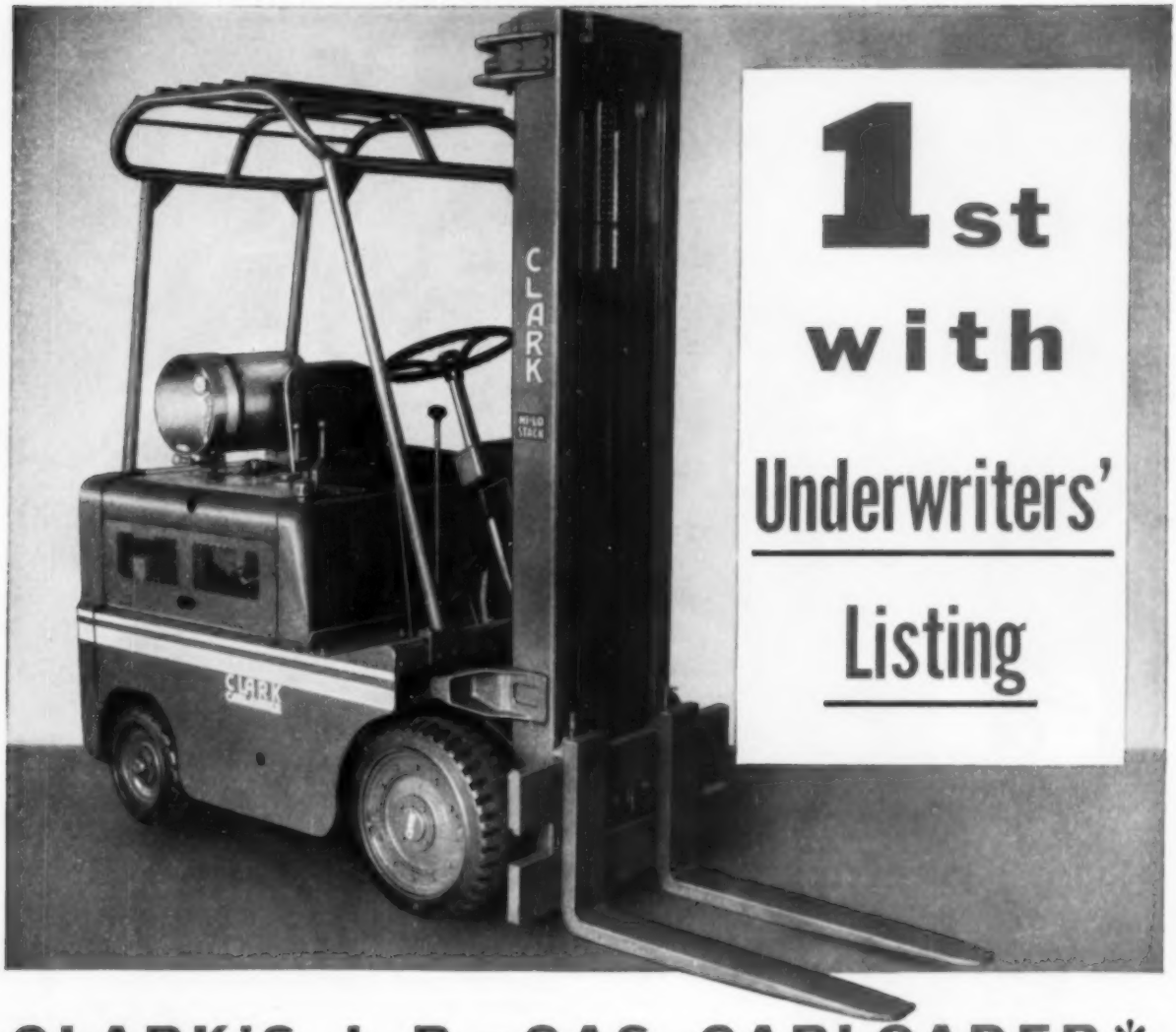
Special Baskets — Many parts must be supported on end and, for such work, special baskets prove convenient and handle many pieces at a time, keeping them separated so that heat is applied uniformly on all sides. Such baskets are made by forming ordinary perforated metal to the required shape and welding joints. Often, as in left photo, short lengths of tube are added to provide individual recesses for each part. This avoids parts sticking together and enables the salt to contact all surfaces. In Autocarb baths, the uniform contact with the heated salts yields cases of uniform thickness.

Other slender parts that are more or less self-separating but must be dipped into the bath on end are handled in open frame box-like holders like that in center photo. Having only a single compartment, these holders are loaded rapidly and readily handled and dumped when heating and quenching are completed.

Notched Racks—For stampings and other parts, including cams and gears that are generally flat and of disc or annular ring shape, racks like that in righthand photo have proved very useful. Eye bars fit into the rectangular frame and have notched cross arms on which the stampings are hung. One work piece is held in each notch and so is separated from the next part and cannot stick to it.

There is a foot plate on the rack to hold it upright on a bench while it is loaded. A fork supports the rack when it is shifted to the heating bath and while submerged therein. As the parts are held on edge and are dipped in that position, heating is uniform on each side, hence warpage tendencies are at a minimum.

Without the above expedients, parts would have to be wired individually and then would not be uniformly spaced. Also, the time for wiring and unwiring would be much greater than for loading and unloading the racks. Racks and baskets cost little, have long life and yield savings in time and scrap that soon pay construction costs.



1st with Underwriters' Listing

CLARK'S L.P.-GAS CARLOADER*

reduces engine maintenance, eliminates obnoxious exhaust fumes

1. Greatly reduces engine maintenance:

——eliminates unburned carbon deposits and crankcase dilution.

——eliminates fuel pump and complicated carburetor adjustments.

2. Eliminates obnoxious exhaust fumes:

——L.P.-Gas provides almost perfect combustion, excellent for indoor operations.

3. Provides safe, efficient operation:

——vacuum ignition switch is interlocked with fuel line and manifold, impossible to spill fuel or load-up engine.

——high compression head (8.5 to 1) gives maximum economy and power from high octane L.P. Gas.

——quickly demountable tank takes 3 minutes to change.

——Stellite valves and seats prevent burning from high flame temperature of L.P. Gas.

*4000 lb. capacity, available with standard shift, Hydratork or Dynatork.

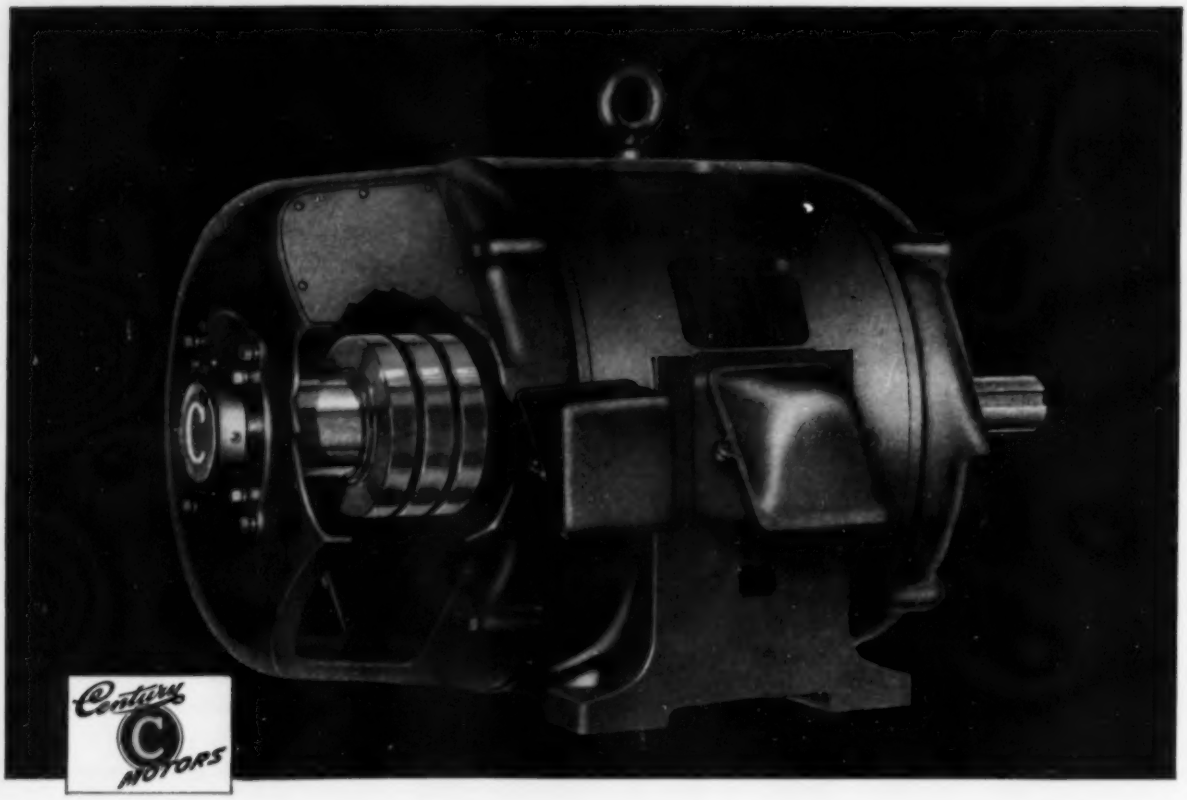
Now you can have the advantages of liquified petroleum gas-powered (butane, propane) materials handling, with complete safety. The Clark L.P.G. Carloader is the first lift truck to receive the all-important listing of Underwriters' Laboratories. Field and factory tested for two years, Clark's unit is specifically designed and metered for fork truck operation. For details, call your local Clark dealer, listed under "Trucks, Industrial" in the Yellow Pages. Or send the coupon for specifications.

CLARK EQUIPMENT

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 36, Michigan

☐ Send details on LPG truck

Name_____
Firm_____
Address_____
City_____



perfect contact at high speed

Through Advanced Casting Techniques, We Help Our Customers to Better Serve Their Customers.

Bronze collector rings, like these, are important power transmission factors in electric motors—such as those produced by Century Electric Company, St. Louis, Missouri. Making high speed revolutions with the armature, collector rings must be perfect, as sand inclusions, pits, or other flaws cause arcing, with subsequent loss of motor power.

Century Electric Company, leading manufacturer of quality electric motors, generators, and related equipment, was aware of National Bearing Division's outstanding reputation for quality copper-base castings, using advanced foundry techniques and mass production.

Century was confident we could produce, as specified, flawless bronze collector rings for use in their products.

And their confidence was justified.

Our modern, centrifugal, permanent mold technique enables us to exactly meet Century Electric's specifications. This advanced foundry method eliminates sand molds for castings such as these. The bronze is tough and dense, and rings are cast close to size, minimizing machining. And Century enjoys dollar savings through our production-run economies.

Most important to them, however, is the fact that they are now providing their customers with equipment that includes collector rings of the highest quality.

If your product requires precision-cast bronze or other copper-base components, it will pay you to investigate National Bearing Division. We produce copper-base castings, large or small, with or without machining. And our production-run economies will probably save you money.

Write National Bearing Division for full information and your copy of our catalog.

AMERICAN Brake Shoe COMPANY

NATIONAL BEARING DIVISION

4930 Manchester Avenue, St. Louis 10, Mo.

Plants in: St. Louis, Mo. • Meadville, Pa. • Niles, Ohio • Portsmouth, Va. • St. Paul, Minn. • Chicago, Ill.

NEW PRODUCTS and equipment

Reply card on page 167 will bring you free literature, editorial clips or more information on new products and equipment described or advertised in this issue

Bench-Model Riveter

. . . leaves hands free

This air-powered, bench-model riveter will clinch everything up to ¼-inch tubular steel rivets. Designed for sustained use, the riveter has a rugged air cylinder that delivers over 2 tons of pressure, taking a maximum 150 psi from normal air supply lines.

The machine may also be used

for stapling, light punching, knocking out rivets, etc. Semi-portable, it weighs only 60 pounds. It is foot operated with a metering-type treadle valve. Hands are free. Robinson Products Inc.

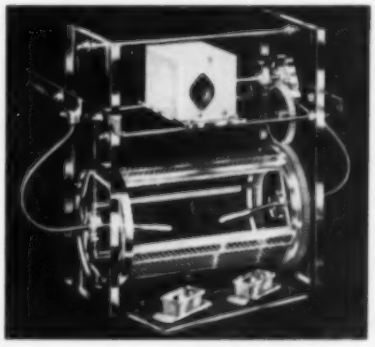
FOR MORE DATA CIRCLE NO. 1 ON REPLY CARD

Plating Barrel

. . . for small quantities

This portable plating barrel weighs 27 pounds, was designed for small quantities. It is fabricated in acrylic.

Driven by torque-rated geared motor, barrel uses standard electric supply. Inside dimensions are 6 x 12 inches, with 3/32-inch perforations. Gears and sides are ⅝ inch thick and withstand 180° F. All metal parts exposed to plating



solution are made of Monel. Starline Products.

FOR MORE DATA CIRCLE NO. 2 ON REPLY CARD

Hand Milling Machine

. . . can use standard fixtures

This hand milling machine permits use of standard fixtures, centers and vises used on large machines. Extra-large 4 x 22-inch worktable with T-slot has 8-inch longitudinal travel. Hand lever can be adjusted in six positions for

most convenient position for operator.

Saddle is equipped with a precision micrometer ball crank with 4 inches traverse movement. Hand lever operation is optional. General Electric ⅓-hp continuous-duty, rubber-mounted motors are standard and are provided with or without reversing switches. Viking Industries.

FOR MORE DATA CIRCLE NO. 3 ON REPLY CARD

Machine Mills

. . . two systems combined

Two new developments, a noncontacting tracer control and a fair-curve interpolating system are combined in the model 102 Electronic airfoil milling machine. They

are combined for generating original three-dimensionally contoured shapes from a series of simple cross-sectional templates.

Machine has been successfully used to manufacture original airfoil masters, master cams for production airfoil milling and grinding machines, metal patterns for various blade casting processes and general experimental and prototype machining of airfoil shapes. Pratt & Whitney, division of Niles-Bement-Pond Co.

FOR MORE DATA CIRCLE NO. 4 ON REPLY CARD

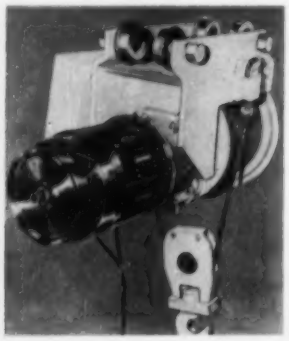
Electric Hoists

. . . capacities to 4 tons

Electric hoists line for overhead materials handling has ca-

pacities ranging upward from 4 tons, with special attention given to applications requiring lifts over 15 tons.

Featuring a-c motors and gear-reduction units, standard models of 4, 5, and 6-ton capacities have



wire rope lift, with swivel hook suspended on a two-part line. Hoists are all-steel welded construction with their electrical components protected for outdoor, year-round operation. Suspension is by lug, hook, plain or geared trolley. R. G. LeTourneau Inc.

FOR MORE DATA CIRCLE NO. 5 ON REPLY CARD

Liquid Etch

. . . safety is big feature

No special clothes, gloves, goggles or aprons need be worn when applying Surfa-Etch, Rust-Oleum's liquid etching product. It is fume-free, odor-free, noninflammable and will not damage metal surfaces in the room. It cleans, etches and neutralizes the concrete or cement surface in one application by cleaning the pores

free from oils, greases, dirt and accumulated soap film, and neutralizing the alkalies.

It should be applied liberally by brush or spray. It may be used as a dust and water repellant sealer with their floor and deck coatings as the finish coat. Rust-Oleum Corp.

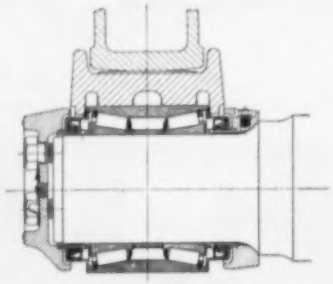
FOR MORE DATA CIRCLE NO. 6 ON REPLY CARD

Bearing Application

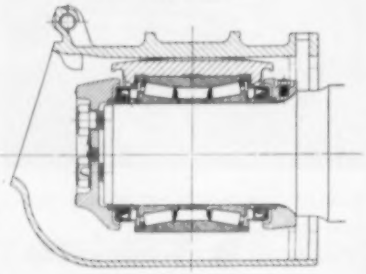
. . . eliminates journal box

A freight car journal bearing application, which will reduce the initial cost of roller bearing for freight cars is announced by Timken. Necessity of a journal box has been eliminated.

The journal bearing has been standardized so parts within the



Pedestal type side frame



and integral box side frame

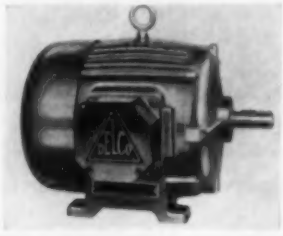
bearing application can be interchanged. This is a heavy-duty application suitable for any type of freight car service. It can be used with integral box type side frames and pedestal type side frames. Timken Roller Bearing Co.

FOR MORE DATA CIRCLE NO. 7 ON REPLY CARD

Electric Motors

. . . meet NEMA re-rating specs

A line of AC, squirrel cage, induction electric motors, in frame sizes from 182 through 326, has



been developed to meet new NEMA standards on re-rated frame sizes.

One of the Delco motors is an open drip-proof motor featuring cast iron main and end frames, aluminum die cast rotors, grease-lubricated double-shielded ball bearings, with cotton and varnish insulation and drip proof baffle cast as part of the end frame. Another is the totally-enclosed fan-cooled motor built with a sturdy ribbed frame construction which allows external fan to direct air efficiently over the smooth ribbed frame. Delco Products, Division of General Motors Corp.

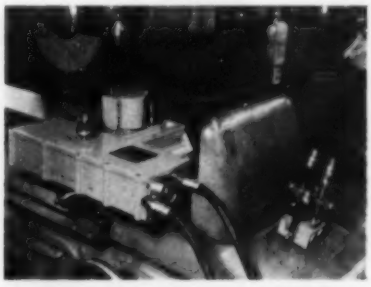
FOR MORE DATA CIRCLE NO. 8 ON REPLY CARD

Automatic Dresser

. . . for surface grinders

Model 32 automatic grinding wheel dresser is designed especially for surface grinders and is hydraulically operated. It can be used for any type of form that can be entered by the diamond. Little skill is required to operate it.

A hydraulic valve actuates diamond movement across the wheel, and speed control valves adjust dressing speed. It features complete elimination of pantograph linkages. Sure, accurate reduction



is made from the enlarged template by means of cams in the form of inclined planes. Hoglund Engineering & Mfg. Co. Inc.

FOR MORE DATA CIRCLE NO. 9 ON REPLY CARD

Mechanized Structural Cleaning

. . . beats hand labor 100 times

Preparing structural steel for painting is no longer a labor and time-consuming necessity. Independent power brushes will clean thoroughly about 100 sq ft of metal surface for every square foot cleaned by hand labor. Special trollies permit accommodation to most surfaces by inverting the machine.

Examples of the machine's potential: Cleaning inside flanges and webs of tee bars, one man can

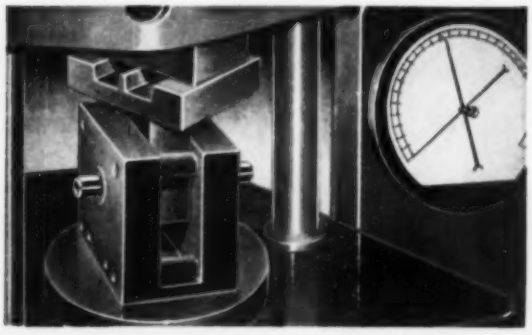
Normal leverage puts the load on the pins at these points. Pins must have a high resistance to shearing — and every pin must stand up to plenty of abuse. Many manufacturers' tests have proved Rollpin's uniformly high shear strength.

consistent strength...as important in the pin as in the socket

The Moore Drop Forging Company, who manufactures the famous Craftsman wrenches for Sears Roebuck and Co., used stainless steel rivets to fasten the universal joint on their Flex sockets. Thorough testing, under all possible load conditions and drive angles, convinced them that Rollpin was stronger than the stainless steel rivet previously used. This led to a redesign of the joint with Rollpins replacing the rivets. Also, the spring tension inherent in the Rollpin locking principle was used to provide the "drag" that holds the socket head in angular position. The result . . . an improved product at lower cost.

Dependability like this is based on the rigid ESNA® quality controls that insure consistent strength and mean reliable performance by every Rollpin.

Moore Drop Forging Company was able to save assembly time, too. Rollpin is simply driven into holes drilled to normal production tolerances. It compresses as driven, locking itself in place by exerting pressure on the hole walls. In this case, the extra operation of spinning on a rivet head was eliminated.



We urge you to test spring pins before you buy — for uniformity of diameter and length, hardness, insertion and removal forces, and recovery of diameter, as well as shear strength.

ELASTIC STOP NUT CORPORATION OF AMERICA

Dept. R29-760, Elastic Stop Nut Corporation of America
2330 Vauxhall Road, Union, New Jersey

Please send me the following free fastening information:

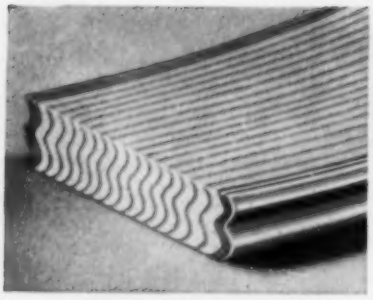
☐ Rollpin samples
☐ Rollpin bulletin
☐ Here is a drawing of our product. What self-locking fastener would you suggest?

Name_____ Title_____

Firm_____

Street_____

City_____ Zone_____ State_____



Cross section view of the GUARDIAN gasket shows its unique and rugged construction—alternate layers of metal and asbestos. The inner and outer edges are reinforced with two or more thicknesses of metal. For use against acids and other chemicals, GUARDIAN gaskets are made of stainless steel with "Teflon" filler.

GUARDIAN gaskets are made in round, oval, square, flatside, diamond, and pear shapes. They are furnished in a wide range of sizes for pipe flanges, boilers and other equipment. For raised face pipe flanges, GUARDIAN gaskets with metal centering rings are recommended.

Keeps joints tight automatically, regardless of temperature changes

Guardian* Gasket

GUARDIAN gaskets assure *permanently* tight joints because they compress and rebound instantly and repeatedly. Thus, they conform with expansion and contraction caused by changes in temperatures. The need for retightening joints is greatly reduced resulting in *less* maintenance and *longer* gasket life.

Since GUARDIAN gaskets do not adhere to the flanges, you save two ways: (1) time required to clean the flanges is reduced, and (2) the gaskets can frequently be reused.

GUARDIAN gaskets are unaffected by extreme temperatures and pressures. They offer maximum protection against blow-outs and leaks under *all* service conditions. Get all the facts about GUARDIAN gaskets—call your Garlock representative or write for folder AD-104.

THE GARLOCK PACKING COMPANY, PALMYRA, NEW YORK

Sales Offices and Warehouses: Baltimore • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Cleveland Denver • Detroit • Houston • Los Angeles • New Orleans • New York City • Palmyra (N. Y.) • Philadelphia Pittsburgh • Portland (Oregon) • Salt Lake City • San Francisco • St. Louis • Seattle • Spokane • Tulsa.

In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

**Registered Trademark*

GARLOCK

PACKINGS, GASKETS, OIL SEALS, MECHANICAL SEALS, RUBBER EXPANSION JOINTS

NEW PRODUCTS and equipment

finish 17 tons, or 175 tees, in one day; cleaning webs and inside flanges of wide-flange beams, one man can clean 150 tons, or 150

beams, in one day. Westinghouse reversible 3-hp motor provides power. Independent Iron Works Inc.

FOR MORE DATA CIRCLE NO. 10 ON REPLY CARD

Five-Ton Puller

. . . first for aluminum

Utilizing a special aluminum alloy, the Ohio 5-ton puller weighs less than 60 pounds, yet has the required 6-foot lift. Developed to

meet revised U. S. Army specs, it is the first time aluminum has been used successfully on a heavy duty puller.

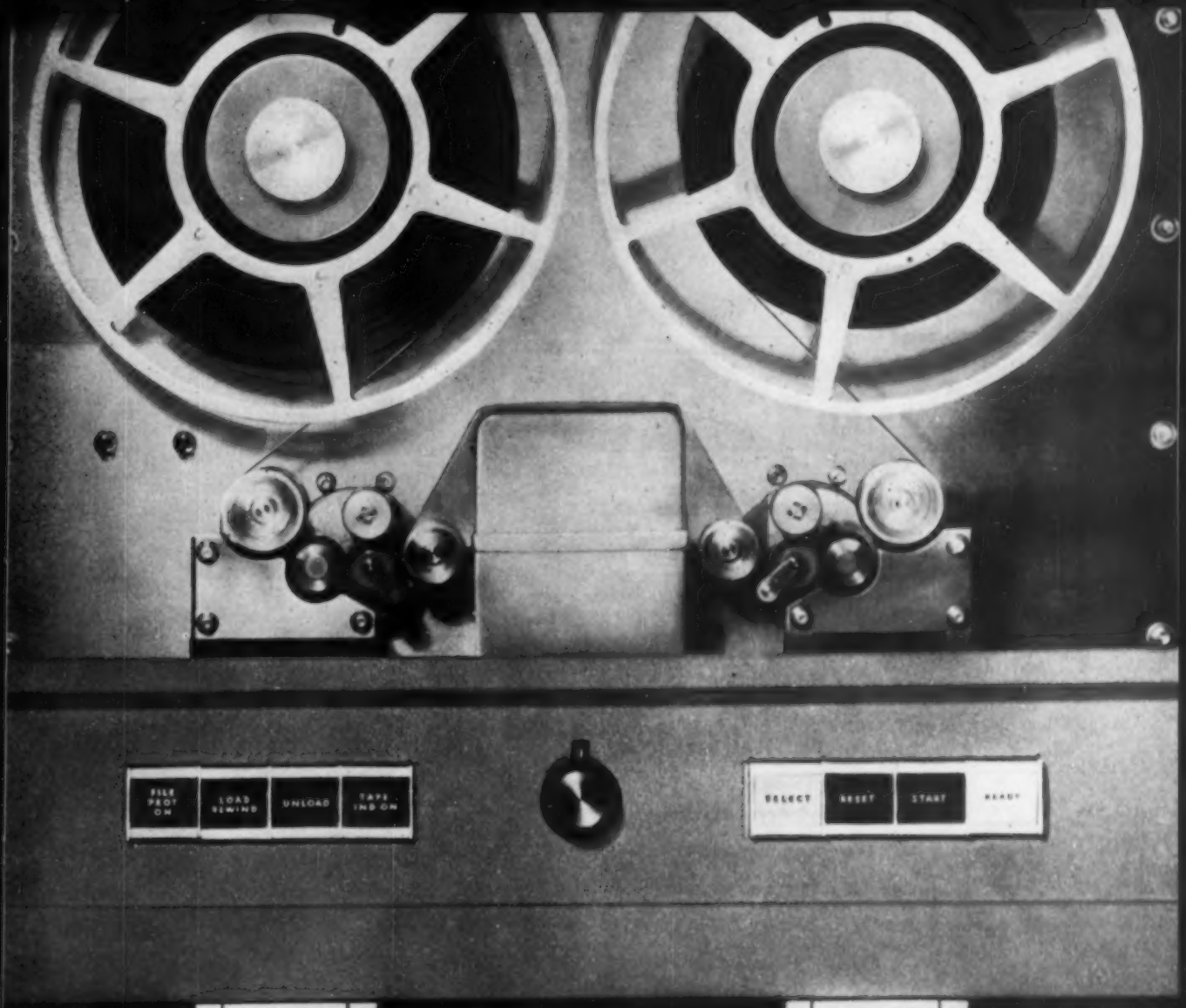
It can be used in place of a hand hoist, or employed horizontally to move machinery. Brake is composed of alternate bronze and steel discs, unaffected by moisture or rust. Safety handle gives positive protection against overloading. Ohio Hoist & Mfg. Co.

FOR MORE DATA CIRCLE NO. 11 ON REPLY CARD

Gas Generator

. . . efficient, economical

An endothermic gas generator for controlled atmosphere fur-



A "Giant Brain" that's Strictly Business

IBM's new 702 Electronic Data Processing Machine brings to the accounting and record-keeping problems of business the speed and capacity of giant scientific computers.

It can absorb millions of facts and figures on its magnetic tapes (shown here), process this vast quantity of data, and turn out the results in the form you need. Payrolls, billing, manufacturing and inventory control, cost allocation, manpower scheduling, fiscal accounting — all the complex operations of modern business — are performed at high speed.

This is *business* automation at its highest development.

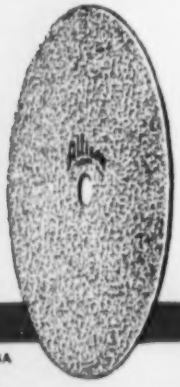
International Business Machines
590 Madison Avenue, New York 22, N. Y.

IBM
TRADE MARK

World's Leading Producer of Electronic Accounting Machines

HOW *ABRASIVE* CUTTING GAVE *EACH* A VALUABLE ASSIST!

Modern industry recognizes the key importance of the "new" high-temperature-resistant alloys in the development of jet engines and atomic energy. Neither development would have been possible otherwise. Yet too few production managers know about the valuable assist rendered by Allison Abrasive Cutting. *Abrasive cutting has consistently proved itself the only economical and efficient method for cutting these extremely tough wonder metals.*



Allison wheels have been developed to cut any of these metals. They are standard wheels, requiring no special machines or cutting techniques.

Tough Cut-Off Jobs Look Easy with Allison...

BALS4A

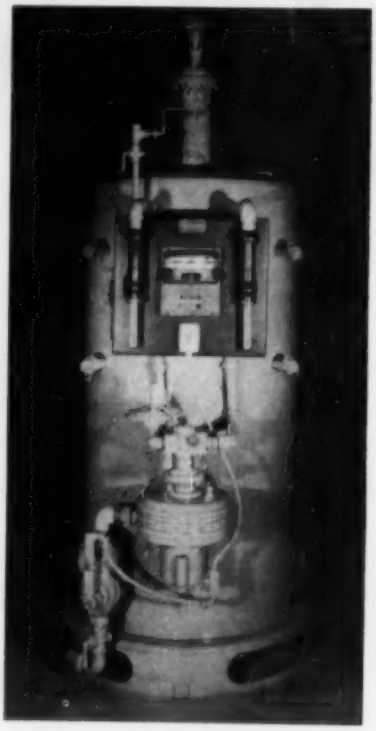
The *best* way to cut many materials . . the *only* way to cut some.

Allison ABRASIVE CUTTING WHEELS

THE ALLISON CO., 255 ISLAND BROOK AVENUE, BRIDGEPORT 8, CONN.

NEW PRODUCTS and equipment

naces produces 1250 C.F.H. output capacity. The G-1250-G has several safety features, including an automatic fire-check in the event operating gas pressure



falls below normal. A gold fuse and thermocouple assure operation with a safe temperature range. Two exhaust vents at the top provide efficient removal of combusted fuel gas. A water-cooled heat exchanger cools the endothermic gas as it leaves the generator. Ipsen Industries Inc.

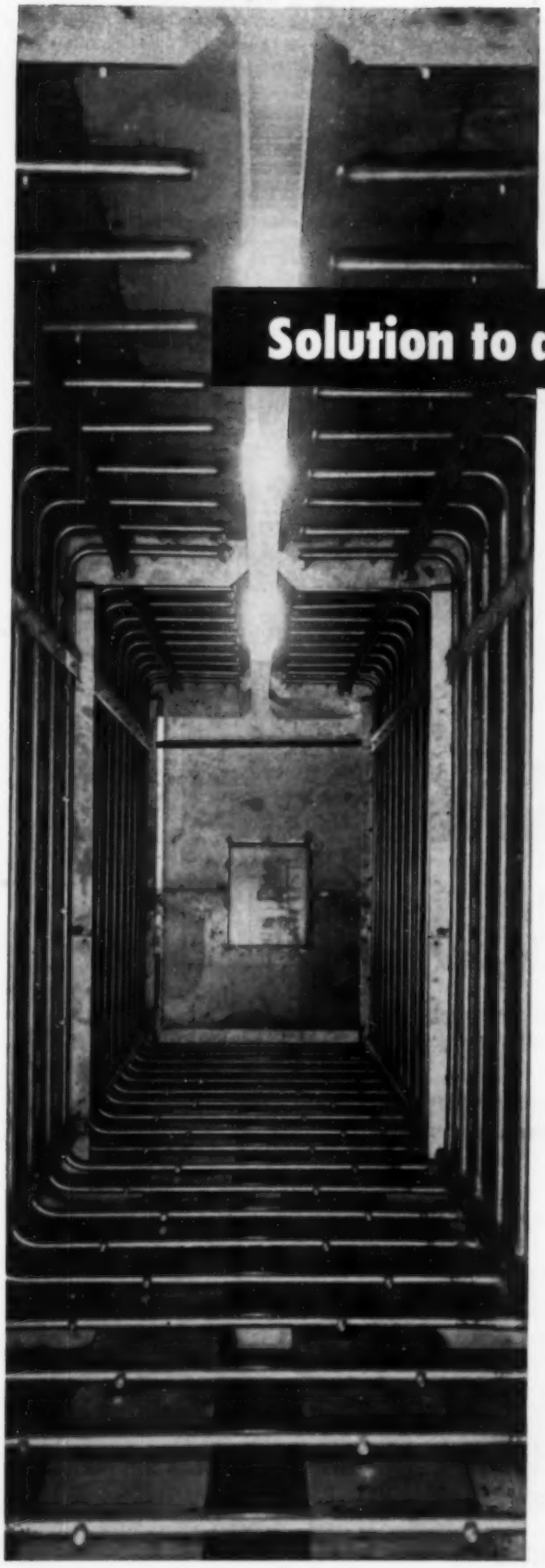
FOR MORE DATA CIRCLE NO. 12 ON REPLY CARD

Aluminum-Neoprene

. . . protects ferrous metals

An aluminum-neoprene coating for protection of ferrous metals against atmospheric corrosion, including salt spray and fumes, requires no separate activators and is self-curing at normal room temperatures.

Seaco No. 342 can be applied in thicknesses of up to 0.002 inch per coat permitting economic application of effective corrosion resistant films. It is elastic and has low moisture or chemical permeability. Application is by brush, spray or roller and coverage is



Solution to a Hot Solution Problem

Carpenter Stainless No. 20 Handles Hot Sulphuric Acid—Solves Corrosion Problem

In this spray booth metal parts are cleaned by a solution of hot sulphuric acid. Booth is fabricated from Carpenter Stainless No. 20 Cb pipe, tubing, sheet and plate.

When you have sulphuric acid or other strong corrosives to handle—or are fabricating equipment to do the job—remember Carpenter Stainless No. 20—also available in bar, wire and strip.

Highly resistant to concentrations or solutions of H_2SO_4, and unaffected by a long list of other highly corrosive acids, liquids, gases, Carpenter Stainless No. 20 cuts the cost of corrosion control. What's more, it has the ductility and general workability for trouble-free bending, machining, threading, welding and brazing.

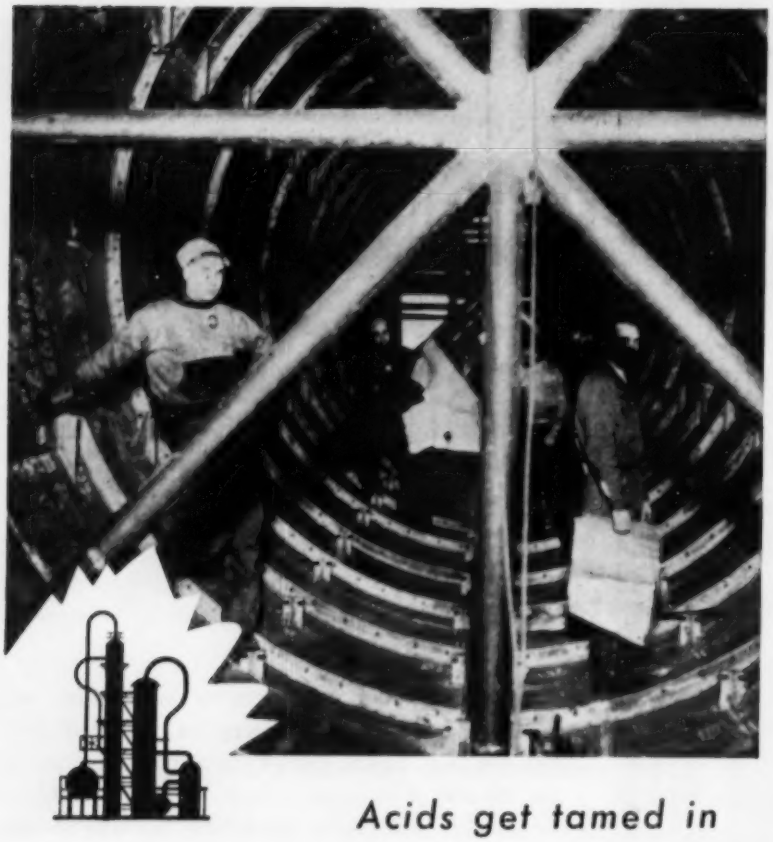
Now is the time to get complete information on Carpenter Stainless No. 20 Cb in its many forms — see what it has to offer you. Write today for your copy of the Carpenter Stainless No. 20 handbook. It contains data on physicals, corrosion resistance, fabrication.

The Carpenter Steel Company, Alloy Tube Division, Union, N.J.
Export Dept.: The Carpenter Steel Co., Port Washington, N. Y.—"CARSTEELCO"

Carpenter

Stainless Tubing & Pipe

ARCOS FOR FINEST QUALITY WELDS



*Acids get tamed in towers of **welded** clad steel*

With no weak spots to corrode, Reactors and Towers of welded 410 clad steels can stay "on stream" constantly . . . give longer service life with reduced maintenance.

However, the success of welded equipment that handles corrosive acids depends on sound corrosion resistant weld metal. Arcos Stainless weld metal is a match for *any* job you may have. Even when other factors are involved—extreme heat or pressure—there's an Arcos Stainless Electrode to satisfy the most critical requirements. What's more, if you're faced with an unusual fabrication problem, Arcos technical assistance provides an additional bonus of help. Arcos Corporation, 1500 South 50th Street, Philadelphia 43, Pennsylvania.

WELD WITH ARCOS

STAINLESS RODS AND ELECTRODES

NEW PRODUCTS and equipment

170 sq ft per gallon at 0.002 inch thickness. Chemical Coatings & Engineering Co.

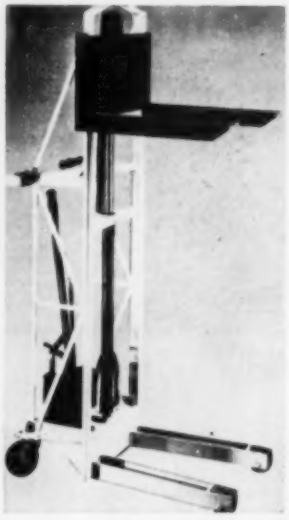
FOR MORE DATA CIRCLE NO. 13 ON REPLY CARD

Die Transfer Truck

. . . with four-speed pump

Platform of this Grand Shop Caddy can be adjusted to a lifting height of 36 or 54 inches, permitting dies or patterns to be transferred from shelves or machines right onto the platform.

A four-speed pump allows the



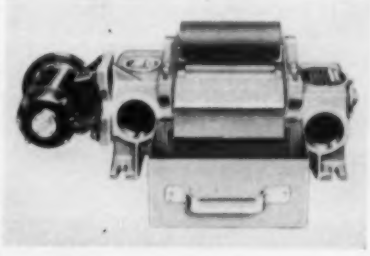
operator to select lifting speed. Dies weighing as much as 500 pounds can be handled safely. Allied Mfg. & Sales Co.

FOR MORE DATA CIRCLE NO. 14 ON REPLY CARD

Magnetic Separator

. . . constantly cleans coolant

Houdaille magnetic separator automatically filters out ferrous metallic particles from coolants



and cutting oils. Small and compact, it operates continuously to provide a constant supply of clean

coolant for all types of machines.

It is available in 10 and 20-gpm capacities for soluble oils; 5 and 10 gpm for mineral oils. Unit features five 2-inch ports, drilled and tapped; three of these may serve as inlet, two as outlet. Three removable plugs are supplied for insertion in unused ports. Honan-Crane Corp.

FOR MORE DATA CIRCLE NO. 15 ON REPLY CARD

Molding Presses

. . . have automatic control

Fifty-ton models are introduced of both the No. 726 compression molding press and the No. 727 transfer molding press which are equipped with all Stokes labor-saving devices. Automatic control over every phase of the molding cycle by means of easily-positioned buttons located on graduated bars is provided.

The new 50-ton presses are suitable either for a one-press molding

operation or as additions to a molder's existing equipment. They are high-speed, self-contained, fully hydraulic presses, with a ram speed among the highest of standard molding presses. F. J. Stokes Machine Co. Inc.

FOR MORE DATA CIRCLE NO. 16 ON REPLY CARD

Compacting Powder

. . . mechanical parts' production

Plast-Iron B-212 is a new reduced-oxide type of powder recommended for the manufacture of mechanical parts (not bearings) where exceptionally high tensile and transverse strengths and good

ARCOS FOR FINEST QUALITY WELDS

NEW aluminum spooled wire offers these advantages for inert gas welding

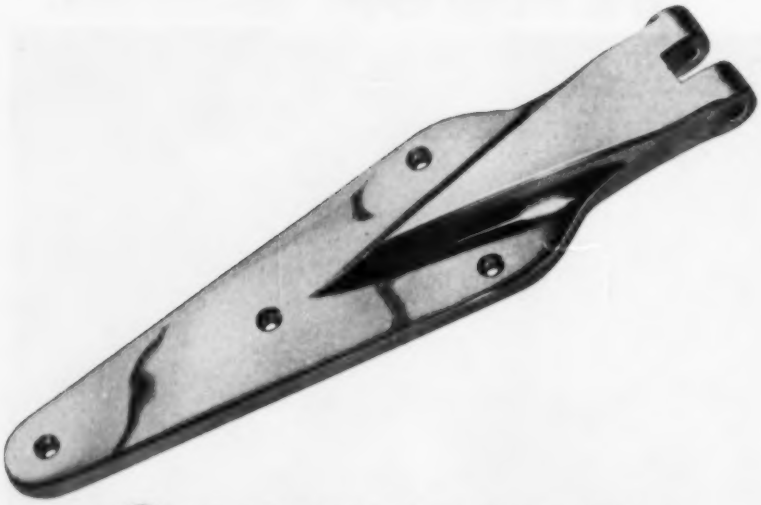
From the standpoint of economy and speed, the welding of aluminum by inert gas produces good welds, providing the aluminum wire is properly prepared for this process. Arcos has established the controls necessary to assure the high quality required for good welds. That's why it will pay you to specify Arcos ALUMAR Spooled Wire. Its uniform, clean finish gives better conductivity and arc stability. Each batch is pre-tested to assure you weld metal characteristics within a critically controlled range.

Write today for our new Bulletin on the complete line of Aluminum Wire—Spooled, Coiled, Straightened and Cut. For every aluminum welding job, Arcos offers the wire you need for the results you want. Arcos Corporation, 1500 South 50th Street, Philadelphia 43, Pennsylvania.

WELD WITH ARCOS

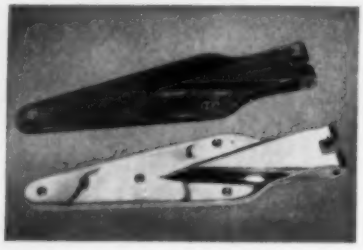
ALUMINUM AND STAINLESS SPOOLED WIRE

How would you SOLVE IT?



① PRODUCTION PROBLEM:

To cut unit costs of finishing and polishing forged brass refrigerator door hinge leaves. Kason Hardware Co., had been using set-up wheels in a costly, two-step operation (prior to final buffing) that left unsatisfactory finishes, with much dragging out of counter-sunk holes.

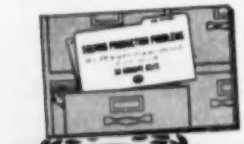


② SOLUTION:

A 3M Representative showed this Brooklyn, N.Y. manufacturer how the 3M Method would finish and polish forgings in *one* operation, with Wetordry Tri-M-ite Cloth belts. The Grit 180 belt does the work of both a #80 and a #150 set-up wheel.

③ RESULTS:

An immediate cost saving of 40%, with better and more consistent finishes, and 3M Abrasive belts completely eliminate the dragging out of counter-sunk holes. A 3M Representative can help you solve your grinding and finishing problems, too. Call him today. There's no cost or obligation.



3M ABRASIVES

SEND COUPON TODAY

Minnesota Mining and Mfg. Co.
Dept. 5-74, St. Paul 6, Minn.

☐ Send me free booklet describing actual 3M Abrasive belt installations.

☐ Please have 3M Representative call

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Company _____

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City _____ Zone ____ State _____

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Made in U.S.A. by Minnesota Mining and Manufacturing Company. General Offices: St. Paul 6, Minn. In Canada: London, Ont., Can. Export: 122 E. 42nd St., New York City. Makers of "Scotch" Pressure-Sensitive Tapes, "Scotch" Brand Magnetic Tape, "3M" Adhesives, "Undercoat" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing.

wear resistance are required without unusual ductility.

Parts made of this material, to which various percentages of copper may have been added, show narrowly-restrained growth upon sintering. Specimens containing 3 per cent copper are equivalent in strength to parts made of conventional iron powder with 10 per cent copper. National Radiator Co.

FOR MORE DATA CIRCLE NO. 17 ON REPLY CARD

Measuring Chart

. . . rapidly measures angles

Gage protractor chart will permit rapid and accurate measurements of all angles for the full

360 degrees, with a vernier reading to 5 minutes of arc. It is adaptable to all models of Wilder micro projector.

Of unbreakable satin finish plastic, the chart cannot be affected by moisture, temperature changes, etc. Literature on the complete line of gage precision plastic charts is available to users of optical comparators. George Scherr Optical Tools Inc.

FOR MORE DATA CIRCLE NO. 18 ON REPLY CARD

Honeycomb Sandwich

. . . indoor, outdoor use

Seaporcel has been franchised to fabricate a glass-aluminum honeycomb sandwich produced by Hexcel Products Co. Known as Hexcelite, it has an aluminum honeycomb core, is faced on both sides by glass and utilizes a bonding resin. It features lightness of weight and will not shatter.

Suitable for indoor and outdoor application, it is translucent and temperature-resistant. It is particularly adapted to interior and

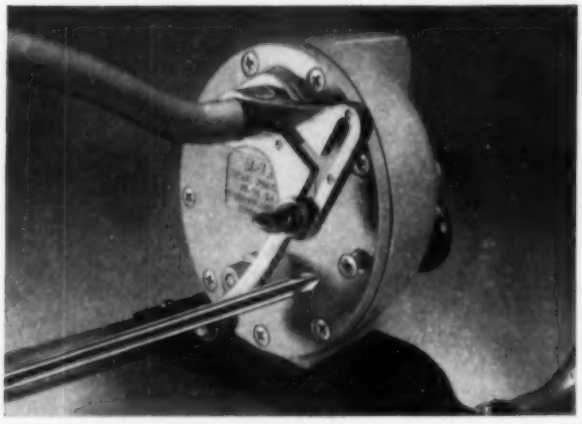
Are Your Fasteners HEADED FOR TROUBLE?

P-K STANDARDS protect you against these and many other symptoms of Screws "headed for trouble". They don't "get by" P-K inspectors—that's why *all* P-K Self-tapping Screws can be "Guaranteed First Quality".

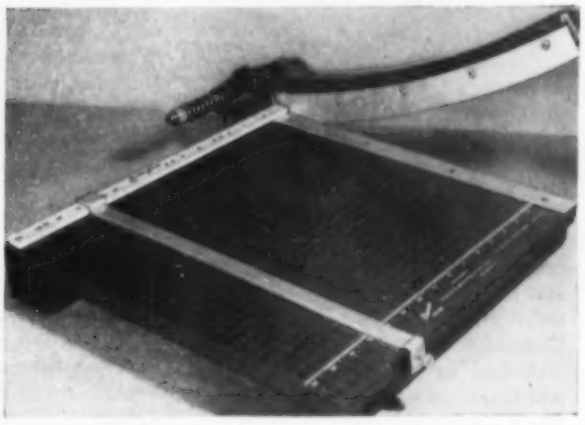
Screws are sometimes like people. If they "lose their heads" under pressure — if they turn out to be "softies" — if they don't "square up," they are headed for trouble.

The difference between screws made to P-K Standards and those that are "headed for trouble" is hard to see at a glance, but the effects of screw failure (parts spoilage, high reclamation expense, hidden weakness) are quickly evident in mounting assembly costs and customer complaints.

P-K Self-tapping Screws are "headed for savings" — not only headed, but threaded, pointed, and heat-treated with the same purpose — to keep your assembly lines trouble-free. That's why so many *more* manufacturers of America's best-known products specify P-K. For information on any fastening problem, talk to a P-K Assembly Engineer. Or write: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.



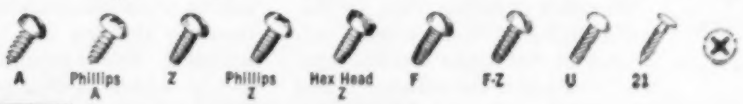
"SWINGIN' SPRAY," MELNOR Products Co.'s popular lawn sprinkler keeps on "swinging" because the oscillating mechanism is separate and sealed from the water intake system. To assure equally dependable assembly strength, resistant to the roughest handling, Melnor fastens zinc and aluminum parts with P-K Screws, 7 Phillips Head Type Z and 18 Type F, driven with air tools.



IN THE PREMIER CUTTING BOARD, made by Photo Materials Co., when 21 P-K Type A replaced wood screws to fasten the ruler, straight blade, bearing casting, and bottom cleats to the hard maple board, pilot holes were eliminated. The 5 P-K Type F Screws that now fasten curved blade to cast iron handle ended tapping. Power driving further speeds assembly.

PARKER-KALON®

The Original **SELF-TAPPING SCREWS**



IN STOCK . . . see your nearby P-K Distributor

exterior walls, partitions and room-dividers, doors, etc. Seaporcel Metals Inc.

FOR MORE DATA CIRCLE NO. 19 ON REPLY CARD

Towing Tractor

. . . for tough and fragile loads

A heavy duty, field-tested towing tractor with a maximum draw bar pull of 7500 lbs, designed for general purpose industrial application is equipped with an 82-hp Chrysler 6A engine with fluid coupling, planetary type drive axle, four wheel brakes, and full front fenders and running boards as standard equipment.

Features such as steering ease, ease of entrance and exit and attractive appearance, suggested by

prospective customers, have been incorporated in the new model. The combination of an 82-hp engine and fluid coupling provide ample power for heavy duty operations as well as delicate handling of fragile loads. Interchangeable tires and rims are used on the drive and steer wheels. This model completes Clark's towing tractor line, now including units in capacities from 500 to 12,000-pound draw bar pull. Clark Equipment Co.

FOR MORE DATA CIRCLE NO. 20 ON REPLY CARD

Phosphatizing Compound

. . . applied by spraying

A product for use in producing a phosphate coating on zinc provides a fine crystaline coating on metal surfaces which serves as an excellent base for subsequent painting operations. Mixed with water, it is applied by spraying.

Fosbond 61, while designed specifically for use on zinc surfaces, may be used on steel. This permits its use in operations where both steel and zinc are being processed. Pennsylvania Salt Mfg. Co.

FOR MORE DATA CIRCLE NO. 21 ON REPLY CARD

FREE LITERATURE

Catalogs and Clip Sheets

Reply card on page 167 will bring you free literature, editorial clips or more information on new products and equipment described or advertised in this issue

Hydraulic Grinder

Rivett Lathe & Grinder Inc.—The Model 1024 internal and universal hydraulic grinder is described in a 16-page catalog. Featured is the double-end wheelhead, which swings 180 degrees for internal and external grinding. Cost saving features are listed. Booklet is amply illustrated.

FOR MORE DATA CIRCLE NO. 22 ON REPLY CARD

Shell Molding

General Electric Co.—Illustrated 28-page manual on shell molding demonstrating how this casting process has reduced machining and finishing costs as well as foundry casting time, includes the latest information on resins and new foundry techniques in this field.

FOR MORE DATA CIRCLE NO. 23 ON REPLY CARD

Truck Bodies

Aluminum Co. of America — "Profitable Trucking", a 51-page report, provides comprehensive descriptions of savings realized by over 30 companies operating aluminum truck bodies. In addition, extensive details are given on their ease of maintenance and repair.

FOR MORE DATA CIRCLE NO. 24 ON REPLY CARD

Metal Protective Chemicals

American Chemical Paint Co.—This company offers a check list which lists metal-protective and paint-bonding chemicals for steel, zinc, aluminum and other metals with industrial applications.

FOR MORE DATA CIRCLE NO. 25 ON REPLY CARD

Shovel Cranes

Link-Belt Speeder Corp.—"The Inside Story of Today's Most Advanced Shovel-Crane Control System" compares the efficiency and reliability of their Speed-O-Matic power hydraulic control system with those used on automobiles, machine tools and other modern machines. Operating and maintenance advantages which are said to increase shovel-crane output are covered.

FOR MORE DATA CIRCLE NO. 26 ON REPLY CARD

Equipment Catalog

Pangborn Corp.—Bulletin No. 1210 is a condensed catalog of their entire line of blast cleaning and dust control equipment and accessories. 24 pages are provided with a special index which simplifies its use. All standard units are described as well as a limited number of the special machines which they manufacture. Special features are descriptions of: Latest models of Rotoblast wheels; descaling machine for sheets and plates; self-cleaning dust collector; EV-2 hydro-finish cabinet.

FOR MORE DATA CIRCLE NO. 27 ON REPLY CARD

Protective Coatings

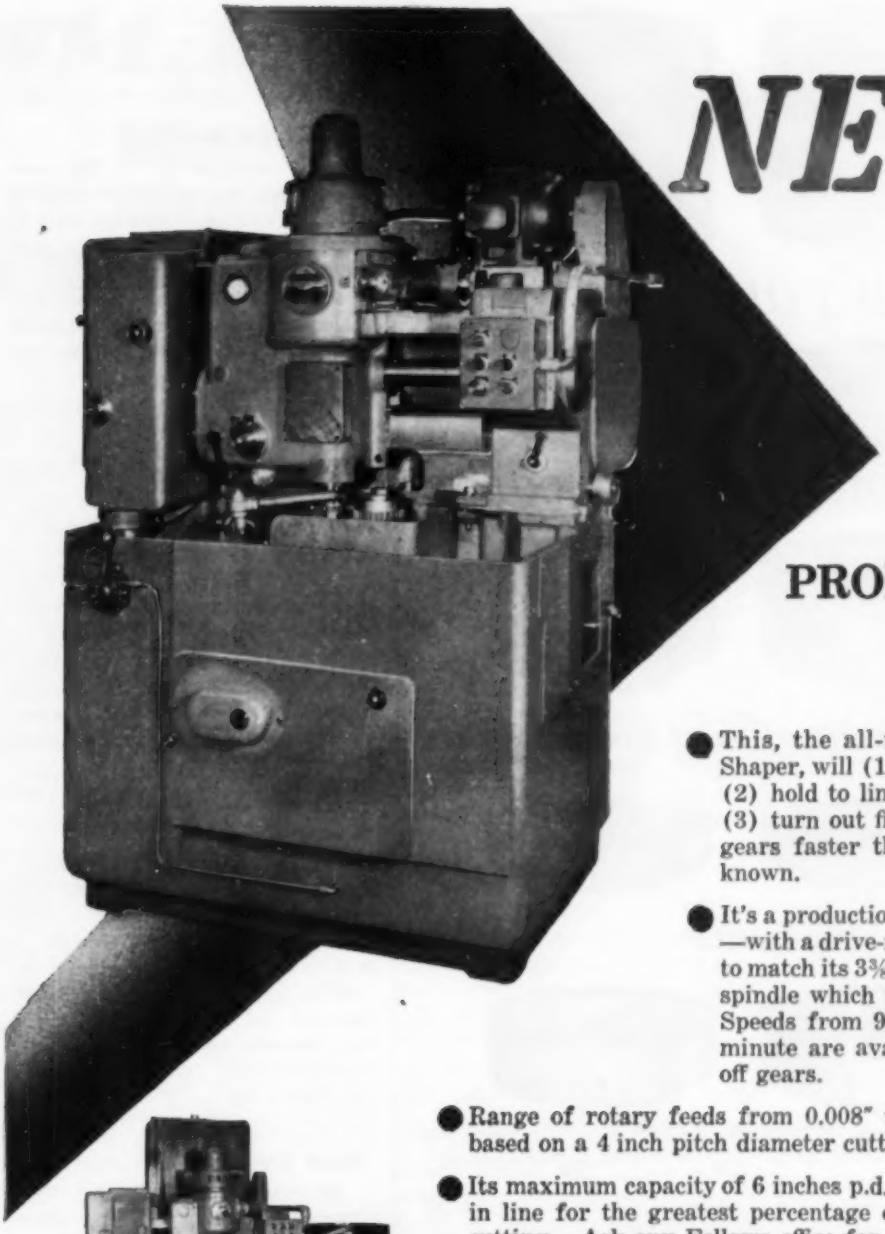
Ceilcote Co.—"Protective Coatings by Ceilcote," an 8-page, illustrated catalog is intended to simplify the complex problem of selecting the correct protective coating for various industrial installations. Complete data on nine different coatings are presented. A chart gives complete information on each coating in concise form.

FOR MORE DATA CIRCLE NO. 28 ON REPLY CARD

Truck Operation

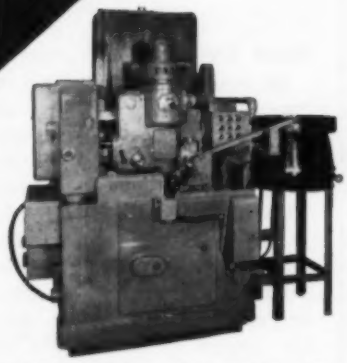
Elwell-Parker Electric Co.—The do's and don'ts of safe operation of industrial trucks are detailed in literature designed for use by company administrative personnel as well as truck operators themselves. Operator training suggestions are included. Safety regulations in effect by several leading users of industrial trucks likewise are listed. Photographs illustrate safe and un-

NEWS



FOR GEAR PRODUCTION MEN

- This, the all-new No. 4GS Gear Shaper, will (1) remove more stock, (2) hold to limits more easily, and (3) turn out finish-cut or preshave gears faster than anything you've known.
- It's a production man's Gear Shaper —with a drive-mechanism beefed-up to match its 3⅜ inch diameter cutter spindle which takes 4 inch cutters. Speeds from 98 to 635 strokes per minute are available through pick-off gears.
- Range of rotary feeds from 0.008" to 0.024" per stroke based on a 4 inch pitch diameter cutter.
- Its maximum capacity of 6 inches p.d. x 2 inch face puts it in line for the greatest percentage of mass output gear cutting... Ask any Fellows office for advance engineering information.

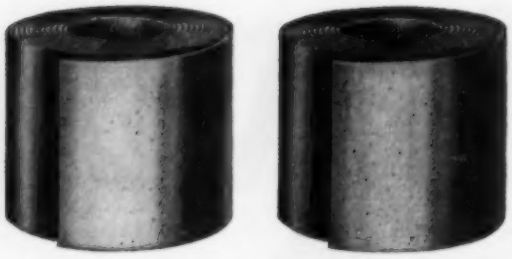


Ideally adapted to automatic loading as illustrated here

THE Fellows GEAR SHAPER COMPANY

Head Office and Export Department, 78 River Street, Springfield, Vermont. • *Branch Offices:* 319 Fisher Building, Detroit 2 • 5835 West North Avenue, Chicago 39 • 2206 Empire State Building, New York 1

GEAR SHAPERS • SHAVING MACHINES • CUTTERS AND SHAVING TOOLS • GEAR INSPECTION INSTRUMENTS • THREAD GENERATORS • PLASTICS MOLDING MACHINES



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UNIFORM QUALITY AND COLOR

shipment after shipment

after shipment!

The intense, lustrous surface finish of Follansbee Polished Blue Strip makes it a desirable material for products which can be marketed without further finishing—products such as heaters, stoves, and many others.

Follansbee Polished Blue Strip is furnished in continuous coils for use in automatic press operations, with uniform strip gauge tolerances and the comparable physical and metallurgical specifications of Follansbee Cold Rolled Strip.

You can see the quality of Follansbee Polished Blue Sheets and Strip in the lustrous, uniform color, the smooth, highly polished surfaces. In every operation—pickling, rolling, annealing, blueing, polishing—Follansbee experience and high standards contribute to the making of the finest Polished Blue Sheets and Strip.

You're sure of the best when you specify Follansbee Polished Blue . . . and you can rely on Follansbee with equal certainty for all Cold Rolled Strip requirements in the number 1 and 2 finishes. Check with your Follansbee Steel representatives for prompt service in adapting his products to your special needs.

FOLLANSBEE STEEL CORPORATION

General Offices, Pittsburgh 30, Pa.

Polished Blue Sheets and Coils — Cold Rolled Strip
Seamless Terne Roll Roofing

Sales Offices—New York, Philadelphia, Rochester, Cleveland, Detroit, Milwaukee, Chicago, Indianapolis, Kansas City, Nashville, Los Angeles, San Francisco, Seattle; Toronto and Montreal, Canada. Plants—Follansbee, West Virginia

FOLLANSBEE METAL WAREHOUSES
Pittsburgh, Pa. Rochester, N.Y. Wallingford, Conn.

safe practices. 31 rules for safe, effective operation of trucks are pictured and/or discussed.

FOR MORE DATA CIRCLE NO. 29 ON REPLY CARD

Safe-Torque Drivers

Scully-Jones & Co. — The new safe-torque drivers are covered in a 6-page catalog. Reasons why it gives you increased production and accuracy plus economy are given. A schematic drawing is included with parts identified. Dimensions and specifications chart also are included.

FOR MORE DATA CIRCLE NO. 30 ON REPLY CARD

Industrial Trucks

Yale & Towne Mfg. Co.—Yale electric trucks in capacities ranging from 1000 to 100,000 pounds are described and illustrated in a two-color, 12-page booklet. Cutaway photographs and diagrams show the outstanding features of the trucks. Illustrations show them in time and money saving applications. Specifications sheet provides data on performance and engineering characteristics.

FOR MORE DATA CIRCLE NO. 31 ON REPLY CARD

Industrial Lock Nut

MacLean-Fogg Lock Nut Co.—An 8-page catalog covers the M-F Uni-Torque lock nut. The brochure describes the Uni-Torque as a new lock nut for industry, a reusable, stop-type hexagon semi-finished nut in which part of the top threads are deflected out of their true helix. Other products in the firm's regular line are listed.

FOR MORE DATA CIRCLE NO. 32 ON REPLY CARD

Metal Strip

American Silver Co. Inc.—The Thermostat Metal Division offers a 6-page bulletin which describes American Silver's new ASC-1 thermostat metal strip as well as fabricated bimetal elements for use in automotive, electrical, heating appliance, instrument and control fields. Tables, charts and formulas are given to assist the user in the design of thermostat metal elements. Specifications sheet is included.

FOR MORE DATA CIRCLE NO. 33 ON REPLY CARD

Weldments

United Tool & Die Co.—Photographs of unusual applications of welded fabrication are featured in the two-color brochure entitled

USE A CARD

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NEW PRODUCT INFORMATION

INFORMATION ON ADVERTISED PRODUCTS

FREE EDITORIAL CLIP SHEETS

"You're Always Ahead With Acme Planned Weldment Fabrication" issued by the Acme Welding Division. Complex rotor, housings, bases, machinery frame members, shells and pressure vessels are among the weldments shown. Also illustrated and described are some of the facilities used by a large fabricator like Acme to meet unusual fabrication requirements.
FOR MORE DATA CIRCLE NO. 34 ON REPLY CARD

Pneumatic Stretchers

Acme Steel Co.—Bulletin AD-146, 4 pages, illustrates and describes both the standard and pusher bar pneumatic stretchers. Basic advantages of the standard type and pusher bar stretchers are covered. Steel strap sealers used with the stretcher are briefly described.
FOR MORE DATA CIRCLE NO. 35 ON REPLY CARD

Drive Outlet Units

Oilgear Co. — Oilgearducers, packaged hydraulic drive output units consisting of their constant displacement axial piston motors integral with Falk's complete line of concentric and right angle all-steel reducers, are described in a new 8-page bulletin 56610. Specifications cover complete variable-speed drives with and without Oilgearducers. Applications are listed and described. Installation dimensions are included.
FOR MORE DATA CIRCLE NO. 36 ON REPLY CARD

Power Squaring Shears

Niagara Machine & Tool Works —Comprehensive Bulletin 69D contains latest information on the entire line of their underdrive power squaring shears. Fully described are the Niagara multiple-point sleeve clutch, self-compensating holddown, self-measuring back gage, enclosed drive, four cutting-edge knives, optional accessories and extra equipment. Well-defined specifications are included.
FOR MORE DATA CIRCLE NO. 37 ON REPLY CARD

Dust Control

Mechanical Industries Inc.—Cupola dust control systems are discussed in an 8-page bulletin which includes technical discussions and drawings of a variety of cupola dust control systems. Among them are washing, dry suction cyclone, combination gas conditioner and suction bag. The author presents a simplified and economical approach to the problem of collecting cupola dust dry.
FOR MORE DATA CIRCLE NO. 38 ON REPLY CARD

Cupola Catalog

Whiting Corp.—New developments in cupola design and manufacture, analyses of various Whiting hot blast systems and complete specifications on its cupolas are contained in a 24-page book. Basic advantages of cupola melting and significant design features of their cupolas are presented. Tuyere design and cupola accessories are fully covered.
FOR MORE DATA CIRCLE NO. 39 ON REPLY CARD

Grinding Wheels

Norton Co.—A new 28-page catalog describing its reinforced resinoid line of grinding wheels contains typical application photographs, tables of wheel sizes, prices, operating speeds and other data. Scores of portable grinding operations are listed together with recommended wheel specifications.
FOR MORE DATA CIRCLE NO. 40 ON REPLY CARD

Broaching Machine

Colonial Broach Co.—Bulletin RU-54 describes the entire line of pull-up broaching machines. De-

For free literature, editorial clips or more information on products described in this section, circle the corresponding number at left. Fill in box below for articles or advertisements not numbered.

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PRODUCTS MANUFACTURED _____

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Penton Building
Cleveland 13, Ohio

Readers Service Dept.

tails of the design and operating features are covered in full through the use of a blue print, dimension chart, specification table and brief but thorough text material. Close-up photos contained in the 4-page book point out some of the more recent features on the machine.

FOR MORE DATA CIRCLE NO. 41 ON REPLY CARD

Steel Shelving

American Metal Products Co.—Borroughs Mfg. Co. Subsidiary offers an 11-page catalog covering its new development in simplified steel shelving known as Borroughs Unitized Flexi Steel Shelving. Its advantages are covered, plus installation tips. List of parts, optional accessories are given.

FOR MORE DATA CIRCLE NO. 42 ON REPLY CARD

Production Machinery

Williams-White & Co.—Eleven pages describe and illustrate their production machinery. Hydraulic presses for forming and drawing, hydraulic press gap frames, mechanical, hydraulic and all-steel bulldozers, C-frame punches and shears, bar shears, multiple punches, mechanical benders, straighteners, plywood, laboratory and molding presses are covered. Specifications are included.

FOR MORE DATA CIRCLE NO. 43 ON REPLY CARD

Asphaltic Coatings

Insul-Mastic Corp. of America—This company offers an 8-page booklet which provides considerable coating information in easily read form. In addition to rust prevention, the booklet names the following uses for their reinforced asphaltic coatings: Vaporsealing thermal insulation, waterproofing building walls, dampening sound and vibration, controlling condensation, insulating.

FOR MORE DATA CIRCLE NO. 44 ON REPLY CARD

Surface Finishing

Micromatic Hone Corp.—"Cross Hatch" for May-June covers microhoning flat surfaces. The cycle of the workpiece in the operation is described and illustrated. Advantages of method are covered.

FOR MORE DATA CIRCLE NO. 45 ON REPLY CARD

Electronic Regulator

Reliance Electric and Engineering Co.—A 2-page bulletin describes and illustrates the Reliance VSR, an electronic regulator for speed, voltage and current regulation for industrial electric motor drives. With illustrations and a diagram, the bulletin explains the function of the regulator in controlling motor or generator field excitation in response to the in-put signal from the quantity being regulated. Sealpak Units also are described.

FOR MORE DATA CIRCLE NO. 46 ON REPLY CARD

EDITORIAL REPRINTS:

Company Organization

Is your company well organized so that responsibilities are clearly defined? Do your line executives have enough latitude? Management Consultant M. K. Sheppard shows why organization is the key to sound management, page 78.

FOR MORE DATA CIRCLE NO. 47 ON REPLY CARD

Cold Heading

Process of cold heading originated with the manufacture of bolts and screws. It is now being used to make an extremely wide variety of special items, many of which could not be made economically by any other method. Article beginning on page 110 goes on to say that the operations are performed at high production rates and with great savings in material.

FOR MORE DATA CIRCLE NO. 48 ON REPLY CARD

Inert Gas Annealing

On page 112 you'll find a description of inert gas annealing aluminum at Scovill Mfg. They believe they must control grain structure variables as closely as they do in brass. It's paying off too, for there is less orange peel and earing.

FOR MORE DATA CIRCLE NO. 49 ON REPLY CARD

Corrosion Testing

Humidity cabinets don't tell the whole story, says the article on page 114. Field evaluation continues the most reliable method of evaluating corrosion - preventive performance. Accelerated tests are misleading.

FOR MORE DATA CIRCLE NO. 50 ON REPLY CARD

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7	17	27	37	47	57	67	77	87
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STEEL

July 12, 1954

Market Outlook

STEEL PRODUCTION will be an increasingly better gage of business conditions as the summer moves along.

Signing of a new contract between the steel companies and the steelworkers assures continued labor peace in the steel industry. New and higher prices on steel are being set rapidly to pass along part of the steel wage boost. There'll be no surge of buying as a hedge against a strike or price rises. Meanwhile, inventories of steel will have been pretty well whittled down and represent a lesser drag on steel demand.

TRUER PICTURE—Thus, there won't be an artificial stimulant on the one hand and an unusual depressant on the other. Current consumption should be pretty accurately reflected in steel demand and production. Ordinarily steel production is an accurate mirror of business conditions, but the large inventories that had been built up before steel demand eased took away some of the indicator's accuracy.

HEADED UPWARD—Trend in steel production the rest of this year should be upward. However, the uptrend may not be apparent immediately because of summer vacations. An uptrend is in the cards: STEEL's Midyear Forecast (June 28, p. 55) shows that metalworking executives expect their business volume in the second half of this year to increase 10 per cent over the first half. One buoy to business will be defense spending. The Defense department has $45 billion in unobligated funds. In the last few days there was a rash of awards of defense contracts totaling $29 million. They will generate demand for materials and components yet this year. Another big support to business and steel demand is construction, at an all-time high.

Before the holiday and vacation season set in, steel ingot production climbed to 73.5 per cent of capacity after slumping during the early spring. That was only 2 or 3 points below the year's high mark in January.

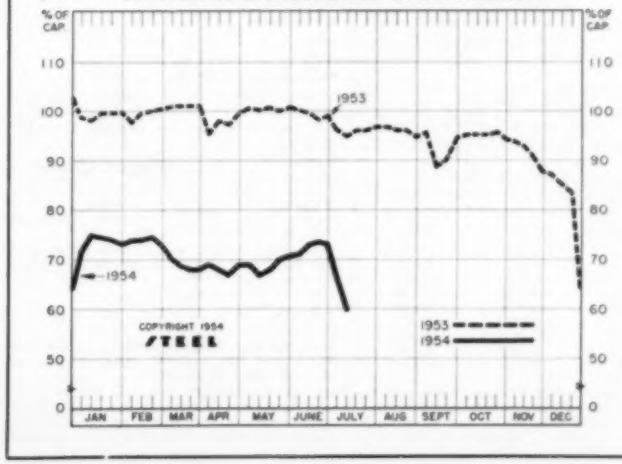
DESTINATION?—A 10-per-cent increase in business in the last half could conceivably push steel ingot production as high as 83 per cent of capacity. That would be equivalent to a rate of 87 per cent last year.

Even if steel production doesn't rise the rest of this year the spread between this year's output and last year's will be narrowed constantly. In the last half of last year, steel production was declining.

HOLIDAY FOR STEEL—Reflecting the Independence Day holiday and summer vacations, steel ingot production declined in the week ended yesterday to the year's lowest mark, 59.5 per cent of capacity. The preceding week's level was 67 per cent.

PRICE REFLECTIONS—The first of the price increases stemming from the wage settlement pushed STEEL's price composite on finished steel to $114.16 a net ton. It had been $113.20. The composite will rise further as additional producers announce new prices. No action was taken on pig iron prices, so STEEL's composite held at $56.54 on No. 2 foundry iron, $56.04 on basic iron, and $57.27 on malleable iron. Steel scrap prices are fairly steady, with STEEL's composite on steelmaking grades at $27.33.

NATIONAL STEELWORKS OPERATIONS



DISTRICT INGOT RATES

(Percentage of capacity engaged)

	Week Ended July 11	Change	Same Week 1953	Same Week 1952
Pittsburgh	59	— 8*	96	7.5
Chicago	68	— 11	98.5	5.5
Mid-Atlantic	55	— 2	97.5	17
Youngstown	60	— 12	93	6
Wheeling	66	— 22.5	97	49.5
Cleveland	57.5	— 1*	103.5	0
Buffalo	61	— 6*	106.5	0
Birmingham	76	0	101	0.5
New England	48	— 2	70	20
Cincinnati	62	— 2	100.5	36.5
St. Louis	55.5	— 10	85	31
Detroit	50	+ 26	105	46
Western	86	0	105	33
National Rate	59.5	— 7.5	94.5	14.5

INGOT PRODUCTION‡

	Week Ended July 11	Week Ago	Month Ago	Year Ago
INDEX (1947-1949=100)	88.6†	97.6	108.7	130.2
NET TONS (In thousands)	1,424†	1,568	1,746	2,092

*Change from preceding week's revised rate. †Estimated. ‡Amer. Iron & Steel Institute. Weekly capacity (net tons): 2,384,549 in 1954; 2,254,459 in 1953; 2,077,040 in 1952.

The Metalworking Outlook—p. 59 Technical Outlook—p. 109

PRICE INDEXES AND COMPOSITES

AVERAGE PRICES OF STEEL (Bureau of Labor Statistics) Week Ended July 6

Prices include mill base prices and typical extras and deductions. Units are 100 lb except where otherwise noted in parentheses. For complete description of the following products and extras and deductions applicable to them write to STEEL.

Rails, standard, No. 1	$4.420	Bars, H.R., alloy	$8.625	Strip, C.R., stainless, 430 (lb)	$0.415
Rails, light, 40 lb	5.817	Bars, H.R., stainless, 303 (lb)	0.418	Strip, H.R., carbon	4.994
Tie Plates	5.175	Bars, H.R., carbon	4.923	Pipe, black, buttweld (100 ft)	14.563
Axles, railway	7.333	Bars, reinforcing	4.945	Pipe, galv., buttweld (100 ft)	17.841
Wheels, freight car, 33 in. (per wheel)	47.000	Bars, C.F., carbon	7.974	Pipe line (100 ft)	143.627
Plates, carbon	4.592	Bars, C.F., alloy	10.975	Casing, oil well, carbon (100 ft)	150.691
Structural Shapes	4.417	Bars, C.F., stainless, 302 (lb)	0.433	Casing, oil well, alloy (100 ft)	216.15
Bars, tool steel, carbon (lb)	0.415	Sheets, H.R., carbon	4.780	Tubes, boiler (100 ft)	‡
Bars, tool steel, alloy, oil hardening die (lb)	0.505	Sheets, C.R., carbon	5.721	Tubing, mechanical, carbon	‡
Bars, tool steel, H.R., alloy, high speed W 6.75, Cr 4.5, V 2.1, Mo 5.5, C 0.60 (lb)	1.075	Sheets, galvanized	7.000	Tubing, mechanical, stainless, 304 (100 ft)	161.193
Bars, tool steel, H.R., alloy, high speed W 18, Cr 4, V 1 (lb)	1.550	Sheets, C.R., stainless, 302 (lb)	0.548	Tin plate, hot-dipped, 1.25 lb	$8.433
		Sheets, electrical	9.000	Tin plate, electrolytic, 0.25 lb	7.133
		Strip, C.R., carbon	7.271	Black plate, can making quality	6.233
				Wire, drawn, carbon	7.769
				Wire, drawn, stainless, 430 (lb)	0.545
				Bale ties (bundle)	5.653
				Nails, wire, 8d common	7.570
				Wire, barbed (80-rod spool)	6.917
				Woven wire fence (20-rod roll)	16.335

‡ Not available.

FINISHED STEEL PRICE INDEX (Bureau of Labor Statistics)

	July 6 1954	June 29 1954	Month Ago	June Average
(1947-1949=100)	141.7	140.9	140.9	140.9

STEEL's FINISHED STEEL PRICE INDEX*

	July 7 1954	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
Index (1935-39 av.=100)	192.47†	189.75	189.75	189.18	152.90
Index in cents per lb	5.214†	5.140	5.140	5.125	4.142

STEEL's ARITHMETICAL PRICE COMPOSITES

	July 7 1954	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
Finished Steel, NT*	$114.16†	$113.20	$113.20	$114.84	$91.82
No. 2 Fdry, Pig Iron, GT	56.54	56.54	56.54	56.54	46.07
Basic Pig Iron, GT	56.04	56.04	56.04	56.04	45.60
Malleable Pig Iron, GT	57.27	57.27	57.27	57.27	47.27
Steelmaking Scrap, GT	27.33	27.83	28.17	43.17	19.50

*For explanation of weighted index see STEEL, Sept. 19, 1949, p. 54; of arithmetical price composite, STEEL, Sept. 1, 1952, p. 130.
†Preliminary

COMPARISON OF PRICES

Comparative prices by districts, in cents per pound except as otherwise noted. Delivered prices based on nearest production point.

FINISHED STEEL	July 7 1954	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
Bars, H.R., Pittsburgh	4.45	4.15	4.15	4.15	3.35
Bars, H.R., Chicago	4.15-4.45	4.15	4.15	4.15	3.35
Bars, H.R., del. Philadelphia	4.55	4.405	4.405	5.302	3.816
Bars, C.F., Pittsburgh	5.40	5.20	5.20	5.20	3.95
Shapes, Std., Pittsburgh	4.25	4.10	4.10	4.10	3.25
Shapes, Std., Chicago	4.10-4.25	4.10	4.10	4.10	3.25
Shapes, del., Philadelphia	4.53	4.38	4.38	4.38	3.492
Plates, Pittsburgh	4.225	4.10	4.10	4.10	3.40
Plates, Chicago	4.10-4.225	4.10	4.10	4.10	3.40
Plates, Coatesville, Pa.	4.225	4.10	4.10	4.35	3.50
Plates, Sparrows Point, Md.	4.225	4.10	4.10	4.10	3.40
Plates, Claymont, Del.	4.225	4.10	4.10	4.55	3.50
Sheets, H.R., Pittsburgh	4.10	3.925	3.925	3.925	3.25
Sheets, H.R., Chicago	3.925-4.10	3.925	3.925	3.925	3.25
Sheets, C.R., Pittsburgh	5.00	4.775	4.775	4.775	4.00
Sheets, C.R., Chicago	4.775-5.00	4.775	4.775	4.775	4.00
Sheets, C.R., Detroit	4.975	4.975	4.975	4.975	4.20
Sheets, Galv., Pittsburgh	5.45	5.275	5.275	5.275	4.40
Strip, H.R., Pitts.	4.425	4.425	4.425	3.975-4.425	3.25
Strip, H.R., Chicago	3.925-4.05	3.925	3.925	3.925	3.25
Strip, C.R., Pittsburgh	5.45	5.45	5.45	5.45-5.95	4.375
Strip, C.R., Chicago	5.70	5.70	5.70	5.70	4.00
Strip, C.R., Detroit	5.65	5.65	5.65	5.45-6.05	4.20
Wire, Basic, Pitts.	5.75	5.525	5.525	5.475-5.525	4.15
Nails, Wire, Pittsburgh	6.85	6.55	6.55	6.35-6.55	5.15
Tin plate (1.50 lb), box, Pitts.	$8.95	$8.95	$8.95	$8.95	$7.75

SEMIFINISHED STEEL					
Billets, forging, Pitts. (NT)	$78.00	$75.50	$75.50	$70.50	$61.00
Wire rods, $\frac{7}{32}$-$\frac{9}{16}$" Pitts.	4.675	4.525	4.525	4.525	3.775

PIG IRON, Gross Ton	July 7 1954	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
Bessemer, Pitts.	$57.00	$57.00	$57.00	$57.00	$47.00
Basic, Valley	56.00	56.00	56.00	56.00	46.00
Basic, deld. Phila.	59.66	59.66	59.66	60.75	49.39
No. 2 Fdry, Pitts.	56.50	56.50	56.50	56.50	46.50
No. 2 Fdry, Chicago	56.50	56.50	56.50	56.50	46.25
No. 2 Fdry, Valley	56.50	56.50	56.50	56.50	46.50
No. 2 Fdry, del. Phila.	60.16	60.16	60.16	61.25	49.89
No. 2 Fdry, Birm.	52.88	52.88	52.88	52.88	39.38
No. 2 Fdry (Birm.) del. Cin.	60.43	60.43	60.43	60.43	45.43
Malleable, Valley	56.50	56.50	56.50	56.50	46.50
Malleable, Chicago	56.50	56.50	56.50	56.50	46.50
Ferromanganese, Duquesne	200.00†	200.00†	200.00†	200.00†	175.00*

*75-82% Mn, gross ton, Etna, Pa. †74-76% Mn, net ton.

SCRAP, Gross Ton (Including broker's commission)					
No. 1 Heavy Melt, Pitts.	$28.50	$29.50	$29.50	$44.50	$21.00
No. 1 Heavy Melt, E. Pa.	23.00	23.00	23.00	43.50	18.00
No. 1 Heavy Melt, Chicago	30.50	31.00	32.00	41.50	19.50
No. 1 Heavy Melt, Valley	27.50	27.50	29.50	45.50	18.50
No. 1 Heavy Melt, Cleve.	25.50	26.50	28.50	44.50	15.00
No. 1 Heavy Melt, Buffalo	25.50	26.50	26.50	40.75	19.75
Rails, Rerolling, Chicago	42.50	42.50	44.50	54.00	27.75
No. 1 Cast, Chicago	36.00	36.00	38.50	41.00	27.50

COKE, Net Ton					
Beehive, Furn, Connisvl.	$14.75	$14.75	$14.75	$14.75	$13.25
Beehive, Fdry, Connisvl.	16.75	16.75	16.75	17.00	15.75
Oven Fdry, Chicago	24.50	24.50	24.50	24.50	20.00

NONFERROUS METALS

(Cents per pound, carlots, except as otherwise noted)

PRIMARY METALS AND ALLOYS

Aluminum: 99+%, ingots 21.50, pigs 20.00 10,000 lb or more, f.o.b. shipping point. Freight allowed on 500 lb or more.

Aluminum Alloy: No. 13, 12% Si, 23.30; No. 13, 5% Si, 23.10; No. 142, 4% Cu, 24.40; No. 195, 4.5% Cu, 0.8% Si, 23.70; No. 214, 3.8% Mg, 24.40; No. 356, 7% Si, 0.3% Mg, 23.20.

Antimony: R.M.M. brand, 99.5% 38.50, Lone Star brand, 29.00, f.o.b. Laredo, Texas, in bulk. Foreign brands, 99.5%, 27.00-27.50 New York, duty paid, 10,000 lb or more.

Beryllium: 97%, lump or beads, $71.50 per lb f.o.b. Cleveland or Reading, Pa.

Beryllium Aluminum: 5% Be, $72.75 per lb of contained Be, f.o.b. Reading, Pa.

Beryllium Copper: 3.75-4.25% Be, $40.00 per lb of contained Be, with balance as Cu at market price on shipment date, f.o.b. Reading, Pa. or Elmore, O.

Bismuth: $2.25 per lb, ton lots.

Cadmium: Sticks and bars, $1.70 per lb del.

Cobalt: 97-99%, $2.60 per lb for 550 lb keg; $2.62 per lb for 100 lb case; $2.67 per lb under 100 lb.

Columbium: Powder, $75.00 per lb, nom.

Copper: Electrolytic 30.00 del. Conn. Valley.

DAILY NONFERROUS PRICE RECORD

	Price July 7	Last Change		Previous Price	June Avg.	May Avg.	July 1953 Avg.
Copper	30.00	Apr.	12	29.75-30.00	30.000	30.000	29.546
Lead	13.80	June	15	14.05	13.906	13.800	13.483
Zinc	11.00	June	3	10.50	10.923	10.290	11.000
Tin	96.75	July	7	96.50	94.178	93.600	81.577
Nickel	60.00	Jan.	14, 1953	58.50	60.000	60.000	60.000
Aluminum	21.50	July	15, 1953	20.50	21.500	21.500	20.923
Magnesium	27.00	Mar.	9, 1953	24.50	27.000	27.000	27.000

Quotations in cents per pound based on: Copper, del. Conn. Valley; Lead, common grade, del. St. Louis; Zinc, prime western, E. St. Louis; Tin, Straits, del. New York; Nickel, electrolytic cathodes, 99.9%, base size at refinery unpacked; Aluminum, primary ingots, 99 + %, del.; Magnesium 99.8%, Freeport, Tex.

Magnesium: 99.8%, self-palletizing pig 27.00; notched ingot 27.75, 10,000 lb or more, f.o.b. Freeport, Tex. For Port Newark, N. J., and Madison, Ill., add 1.20 for pig and 1.25 for ingot. Sticks, 1.3 in. diameter, 46.00, 100 to 4999 lb, f.o.b. Madison, Ill.

Magnesium Alloys: AZ91C and alloys C, H, G and R 32.50; alloy M 34.50, 10,000 lb or more f.o.b. Freeport, Tex., or Madison, Ill. Add 1.20 for Port Newark, N.J.

Mercury: Open market, spot, New York, $270-$275, nom., per 76-lb flask.

Molybdenum: Powder 99% hydrogen reduced $3.40 per lb; pressed ingot $4.06 per lb; sintered ingot $5.53 per lb.

Nickel: Electrolytic cathodes, sheets (4 x 4 in. and larger), unpacked 60.00; 25-lb pigs 62.65; "XX" nickel shot 63.65; "F" nickel shot or ingots for addition to cast iron, 60.00; prices 30.125 del. Midwest; Lake 30.00 del; Fire refined 29.75 del.

Germanium: 99.9%, $295 per lb, nom.

Gold: U. S. Treasury, $35 per oz.

Indium: 99.9%, $2.25 per troy oz.

Iridium: $145-$150 per troy oz.

Lead: Common 13.80, chemical 13.90, corroding 13.90, St. Louis; N.Y. basis, add 0.20.

Lithium: 98%, $11-$14 per lb, depending on quantity.

f.o.b. Port Colborne, Ont., including import duty. New York basis, add 0.92.

Osmium: $140-$150 per troy oz nom.

Palladium: $21 per troy oz.

Platinum: $84-$87 per troy oz from refineries.

Radium: $16-$21.50 per mg radium content, depending on quantity.

Rhodium: $125 per troy oz.

Ruthenium: $75-$80 per troy oz.

Selenium: 99.5%, $5-$6 per lb.

Sodium: 16.50, carlots; 17.00 l.c.l.

Tantalum: Sheet, rod $39.00 per lb; powder $33.50 per lb.

Tellurium: $1.75 per lb.

Thallium: $12.50 per lb.

Tin: Straits, N. Y., spot and prompt, 96.75.

Titanium: Sponge, 99.3+%, grade A-1 ductile (0.3% Fe max.) $4.72; grade A-2 (0.5% Fe max.) $4.46 per pound.

Tungsten: Powder, 98.8%, carbon reduced, 1000 lb lots $4.95 per lb, f.o.b. shipping point; less than 1000 lb $5.10; 99+% hydrogen reduced, $4.65. Treated ingots $6.70.

Zinc: Prime Western 11.00, brass special 11.25, intermediate 11.50, E. St. Louis, freight allowed over 0.50 per pound. High grade 12.35, special high grade 12.50, die casting alloy ingot 15.00, del.

Zirconium: Sponge $10 per lb; powder electronics grade $15, flash grade $11.50.

(Note: Chromium, manganese and silicon metals are listed in ferroalloy section.)

SECONDARY METALS AND ALLOYS

Aluminum Ingots: Piston Alloy 20.00-20.50; No. 12 foundry alloy (No. 2 grade) 19.25-19.75; 5% silicon alloy, 0.60 Cu max., 22.25-22.50; 13 alloy, 0.60 Cu max., 22.25-22.50; 195 alloy 21.00-21.50; 108 alloy 19.75-20.25; steel deoxidizing grades, notch bars, granulated or shot: Grade 1, 20.00-20.50; grade 2, 19.00-19.50; grade 3, 18.00-18.50; grade 4, 17.00-17.50.

Brass Ingot: Red brass, No. 115, 27.00; tin bronze No. 225, 39.00; No. 245, 33.25; high-leaded tin bronze, No. 305, 31.50; No. 1 yellow, No. 405, 23.25; manganese bronze No. 421, 26.75.

Magnesium Alloy Ingot: AZ63A, 31.50; AZ91B, 27.00; AZ91C, 31.50; AZ92A, 31.50.

NONFERROUS MILL PRODUCTS

BERYLLIUM COPPER

(Base prices per lb, plus mill extras 2000 to 5000 lb, f.o.b. Temple, Pa.; nominal 1.9% Be alloy) Strip, $1.68; rod, bar, wire, $1.65.

COPPER WIRE

Bare, soft, f.o.b. eastern mills, 100,000 lb lots, 35.36; 30,000 lb lots, 35.48; l.c.l. 35.98. Weatherproof, 100,000 lb, 36.28; 30,000 lb, 36.53; l.c.l. 37.03. Magnet wire del., 15,000 lb or more 41.83; l.c.l. 42.58.

LEAD

(Prices to jobbers f.o.b. Buffalo, Cleveland, Pittsburgh.) Sheets, full rolls, 140 sq ft or more $19.00 per cwt; pipe, full coils $19.00 per cwt; traps and bends, list prices plus 30%.

TITANIUM

(Prices per lb, 10,000 lb and over, f.o.b. mill) Sheets, $15; sheared mill plate, $12; strip, $15; wire, $11; forging billets $6; hot-rolled and forged bars, $6.

ZINC

(Prices per lb c.l., f.o.b. mill) Sheets 23.00, ribbon zinc in coils, 18.50-20.50; plates 18.00-22.25.

ZIRCONIUM

Plate $27; H.R. strip $28; C.R. strip $35; forged or H.R. bars $27; wire, 0.015 in., 1 cent per linear foot.

NICKEL, MONEL, INCONEL

	"A" Nickel	Monel	Inconel
Sheet, C.R. ..	86.5	67.5	92.5
Strip, C.R. ...	92.5	70.5	98.5
Plate, H.R. ...	84.5	66.5	90.5
Rod, Shapes ...	82.5	65.5	88.5
Seamless Tubes	115.5	100.5	137.5
Shot, Blocks		60.0	...

ALUMINUM

(30,000 lb base; freight allowed over 499 lb) Sheets and Circles: 2S and 3S mill finish c.l.

Thickness Range Inches	Widths or Diameters, In., Inc.	Flat Sheet*	Coiled Sheet	Coiled Sheet Circle†
0.249-0.136	12-49	33.9	...	...
0.135-0.096	12-48	34.4	...	...
0.095-0.077	12-48	35.1	32.7	37.5
0.076-0.061	12-48	35.7	32.9	37.7
0.060-0.048	12-48	36.1	33.2	38.1
0.047-0.038	12-48	36.6	33.6	38.4
0.037-0.030	12-48	37.0	34.0	39.1
0.029-0.024	12-48	37.6	34.3	39.6
0.023-0.019	12-36	38.3	35.1	40.4
0.018-0.017	12-36	39.1	35.7	41.3
0.016-0.015	12-36	40.0	36.5	42.5
0.014	12-24	41.0	37.5	43.8
0.013-0.012	12-24	42.1	38.2	44.8
0.011	12-24	43.1	39.4	46.4
0.010-0.0095	12-24	44.3	40.5	48.0
0.009-0.0085	12-24	45.6	41.9	50.0
0.008-0.0075	12-24	47.1	43.1	51.8
0.007	12-18	48.6	44.6	54.1
0.006	12-18	50.2	46.0	59.1

* 72-180 in. lengths. † 26 in. max. dia.

ALUMINUM

Plates and Circles: Thickness 0.250-3.0 in., 24-60 in. width or dia., 72-240 in. lengths.

Alloy	Plate Base	Circle Base
2S-F, 3S-F	32.4	36.3
50S-F	33.5	37.4
4S-F	34.5	39.1
52S-F	36.2	40.9
61S-T6	37.4	41.5
24S-T4*	39.3	45.4
75S-T6*	47.1	53.7

*24-48 in. widths or dia., 72-180 in. lengths.

ALUMINUM

Screw Machine Stock: 5000 lb and over.

Dia. (in.) or across flats	Round 11S-T3	Round 17S-T4	Hexagonal 11S-T3	Hexagonal 17S-T4
Drawn				
0.125	50.6	57.9	...	...
0.156-0.172	50.6	48.9	...	...
0.188	50.6	48.9	...	62.4
0.219-0.234	47.9	46.2	...	...
0.250-0.281	47.9	46.2	...	59.5
0.313	47.9	46.2	...	56.8
Cold-finished				
0.375-0.531	46.6	44.9	56.2	53.4
0.563-0.688	46.6	44.9	53.4	50.2
0.750-1.000	45.5	43.8	48.9	47.3
1.063	45.5	43.8	...	45.7
1.125-1.500	43.8	42.1	47.3	45.7
Rolled				
1.563	42.7	41.0	...	...
1.625-2.000	42.1	40.4	...	44.1
2.125-2.500	41.1	39.4	...	...
2.750-3.375	39.9	38.2	...	...

ALUMINUM

Forging Stock: Round, Class 1, 43.8-34.4, in specific lengths 36-144 in., diameters 0.375-8 in.; rectangles and squares, Class 1, 50.2-38.4 in random lengths 0.375-4.0 in. thick, widths 0.750-10.0 in.

Pipe: A.S.A. Schedule 40, alloy 63S-T6, 20 ft length, plain ends, 90,000 lb base, per 100 ft.

Nom. pipe size, in.		Nom. pipe size, in.	
⅜	$15.05	3	$ 46.30
1	23.65	4	127.70
1¼	32.00	6	228.50
1½	38.25	8	343.80

MAGNESIUM

Sheet: AZ31, commercial grade, 0.032-in. 94.00, 0.064-in. 73.00, 0.125-in. 60.00, 30,000 lb and over, f.o.b. mill.

Plate: Hot rolled AZ31, 53.00, 20,000 lb or more 0.250-in. and over, widths to 48 in., lengths to 144 in.; raised pattern floor plate, 59.00, 20,000 lb or more, ¼-in. thick, widths 24-72 in., lengths 60-192 in.

Extrusion Stock: AZ31, Rectangles, ¼ x 2 in. 69.20, 1 x 4 in. 63.00. Rod, 1 in. 66.00, 2 in. 62.50. Tubing, 1 in. OD x 0.065-in., 87.00. Angles, 1 x 1 x ⅛-in. 72.90, 2 x 2 x ¼-in. 67.00. Channels, 5 in. 67.80. I-Beams, 5 in. 66.20.

BRASS MILL PRICES

	MILL PRODUCTS a				SCRAP ALLOWANCES f		
	Sheet, Strip, Plate	Rod	Wire	Seamless Tube	Clean Heavy	Rod Ends	Clean Turnings
Copper	48.38b	45.98c	....	48.44	26.000	26.000	25.250
Yellow Brass	41.72	34.50d	42.26	44.63	19.750	19.500	18.000
Red Brass, 85%	45.44	45.38	45.98	48.25	23.000	22.750	22.250
Low Brass, 80%	44.47	44.41	45.01	47.28	22.125	21.875	21.375
Naval Brass	45.76	40.07	52.82	48.92	18.250	18.000	17.500
Commercial Bronze, 90%	46.95	46.89	47.49	49.51	23.875	23.625	23.125
Nickel Silver, 10%	55.36	50.43g	57.60	....	23.625	23.375	11.813
Phosphor Bronze, A, 5% ...	66.56	67.06	67.06	66.23	26.125	25.875	24.875
Silicon Bronze	52.71	51.90	52.75	70.11e	25.125	24.875	24.125
Manganese Bronze	49.48	43.62	54.06	....	18.250	18.000	17.500
Munts Metal	43.96	39.77	....	....	18.625	18.375	17.875

a. Cents per lb, f.o.b. mill; freight allowed on 500 lb or more. b. Hot-rolled. c. Cold-drawn. d. Free cutting. e. 3% silicon. f. Prices in cents per lb for less than 20,000 pounds, f.o.b. shipping point. On lots over 20,000 lb at one time, of any or all kinds of scrap, add 1 cent per lb. g. Leaded.

NONFERROUS SCRAP

DEALERS' BUYING PRICES

(Cents per pound, New York, in ton lots)

Aluminum: 2S clippings 13.00; low copper clippings 13.00; mixed clippings 11.00; old sheet 10.00; borings and turnings 6.00; pistons and struts 7.50; crankcases 10.00; industrial castings 10.00.

Copper and Brass: Heavy copper and wire, No. 1 24.50-25.00; No. 2 copper 23.00-23.50; light copper 21.00-21.50; No. 1 composition red brass 19.00-19.50; No. 1 composition turnings 18.50-19.00; mixed brass turnings 11.50-12.00; new brass clippings 18.00; No. 1 brass rod turnings 15.00; light brass 11.50-12.00; heavy yellow brass 14.00; new brass rod ends 16.00; auto radiators, unsweated 15.00; cocks and faucets 16.00-16.50; brass pipe 16.50-17.00.

Lead: Heavy 11.00-11.25; battery plate 5.75-6.00; linotype and stereotype 13.00; electrotype 11.50; mixed babbitt 12.00-12.50.

Magnesium: Clippings 18.50-19.50; clean castings 17.50-18.50; iron castings, not over 10% removable Fe, 16.50-17.50.

Monel: Clippings 23.00-25.00; old sheet 21.00-23.00; turnings 16.00-18.00; rods 23.00-25.00.

Nickel: Sheets and clips 60.00-65.00; rolled anodes 60.00-65.00; turnings 40.00; rod ends 60.00-65.00.

Tin: No. 1 pewter 55.00-60.00; block tin pipe 75.00-80.00; No. 1 babbitt 50.00.

Zinc: Old zinc, 4.75-5.00; new die cast scrap, 4.50-4.75; old die cast scrap, 3.00-3.25.

REFINERS' BUYING PRICES

(Cents per pound, carlots, delivered refinery)

Aluminum: 2S, 3S clippings 14.75-15.25; 51S, 52S clippings 14.75-15.25; 14S, 17S, 24S clippings 14.00-14.50; mixed clippings 13.00-13.50; old sheet 12.00-12.50; old cast 12.00-12.50; clean old cable, free of steel 14.50-15.00; borings and turnings 12.50-13.00.

Beryllium Copper: Heavy scrap, 0.020-in. and heavier not less than 1.5% Be, 42.00; light scrap 37.00.

Copper Brass: No. 1 copper 27.00-27.25; No. 2 copper 25.50-25.75; light copper 24.00-24.25; refinery brass (60% copper) per dry copper content 22.75-23.00.

INGOTMAKERS' BUYING PRICES

(Cents per pound, carlots, delivered)

Copper, Brass: No. 1 copper 27.00-27.25; No. 2 copper 25.50-25.75; light copper 24.00-24.25; No. 1 composition borings 20.50; No. 1 composition solids 21.50; heavy yellow brass solids 16.50; yellow brass turnings 16.00; radiators 17.50-17.75.

PLATING MATERIALS

(F.o.b. shipping point, freight allowed on quantities)

ANODES

Cadmium: Special or patented shapes $1.70 per lb.

Copper: Flat-rolled 45.04, oval 44.54, 2000-5000 lb; electrodeposited 39.75, cast 42.04, 5000-10,0000 lb lots.

Nickel: Depolarized, less than 500 lb 92.00; 500-4999 lb 88.00; over 5000 lb 86.00.

Tin: Bar or slab, less than 200 lb $1.125; 200-499 lb $1.11; 500-999 lb $1.105; 1000 lb or more $1.10.

Zinc: Bar 18.50, bar or flat top 17.50 ton lots.

CHEMICALS

Cadmium Oxide: $2.15 per lb, in 100 lb drums.

Chromic Acid: Less than 10,000 lb 26.50; over 10,000 lb 27.50.

Copper Cyanide: Under 1000 lb 63.90, 1000 lb and over 61.90.

Copper Sulphate: 100-6000 lb 11.35; 6000-12,000 lb 11.10; 12,000-24,000 lb 10.85; 24,000-36,000 lb 10.60; 36,000 lb and over 10.35.

Nickel Chloride: 100 lb 45.00; 200 lb 43.00; 300 lb 42.00; 400-4900 lb 40.00; 5000-9900 lb 38.00; 10,000 lb and over 37.00.

Nickel Sulphate: 100 lb 37.00; 200 lb 35.00; 300 lb 34.00; 400-4900 lb 32.00; 5000-35,000 lb 30.00; 36,000 lb and over 29.00.

Silver Cyanide: Cents per ounce, 16 oz 80.625; 100 oz 78.50; 25,000 oz and over 77.325.

Sodium Cyanide: Egg, under 1000 lb 19.80; 1000-19,900 lb 18.80; 20,000 lb and over 17.80; granular, add 1-cent premium to above.

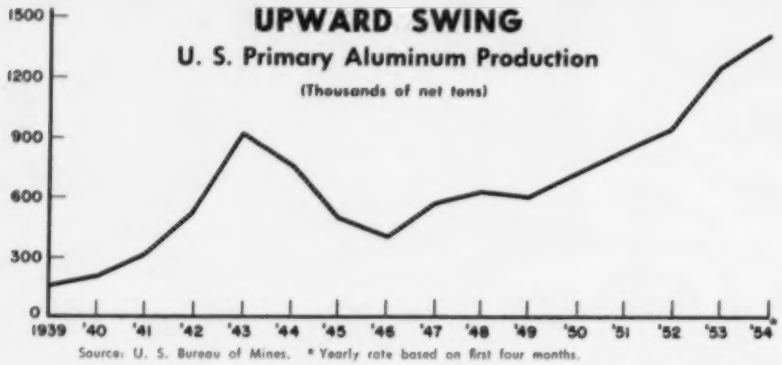
Sodium Stannate: Less than 100 lb 71.5; 100-600 lb 57.2; 700-1900 lb 54.7; 2000-9900 lb 53; 10,000 lb or more 51.9.

Stannous Chloride: (Anhydrous): Less than 50 lb $1.576; 50 lb $1.236; 100-300 lb $1.086; 400-900 lb $1.061; 100-1900 lb $1.037; 2000-4900 lb $1; 5000-19,000 lb 93.9; 20,000 lb and over 87.8.

Stannous Sulphate: Less than 5 lb $1.275; 50 lb 97.5; 100-1900 lb 95.5; 2000 lb and over 93.5.

Zinc Cyanide: Under 1000 lb 54.30, 1000 lb and over 52.30.

Nonferrous Metals



Source: U. S. Bureau of Mines. * Yearly rate based on first four months.

Peacetime's wonderful, say aluminum producers. It's providing enough civilian demand to set new records in aluminum production

LONG-TERM TREND among aluminum producers is the switch to peacetime applications of the light metal. Kaiser Aluminum & Chemical Corp., Oakland, Calif., Reynolds Metals Co., Louisville, and Aluminum Co. of America, Pittsburgh, have sights set on civilian markets.

Aircraft continues to require about 16 per cent of aluminum shipments, but architectural uses of the metal are beginning to demand a larger share. Between 15 and 20 per cent of aluminum shipments were in building applications in 1953. With development of peacetime markets, that proportion is expected to exceed 20 per cent in the next five years.

Applications—Slicing the aluminum pie further, industry men estimate that 11 per cent of production goes into aluminum wire and cable. Rapidly rising automotive applications of the metal claim about 10 per cent of total shipments.

Between 2 and 5 per cent of aluminum output goes to each of such uses as aluminum foil, aluminum powder, preparation of ferrous and nonferrous alloys and production of pots and pans. Irrigation pipe, pigments, furniture, electric motors and household refrigeration each claim 1 to 2 per cent of aluminum production. Some 4000 end uses require the remainder. Among most promising of small volume applications are bridge railings, highway signs, telephone booths and lamp bases.

Enough Capacity—During its growing pains, the aluminum industry has suffered some periods of overcapacity. Production of primary aluminum reached a record 937,330 tons in 1952 and soared to 1,252,015 tons in 1953. Of the 1953 total, about 611,000 tons was produced by Alcoa. Reynolds produced slightly more than one-half of the remainder and Kaiser accounted for slightly less than half.

Third-round aluminum expansion was called off by the government this year with the statement that aircraft requirements will be less than expected. Despite this indication that aluminum supply is adequate for defense needs, civilian demand for the metal continues to swell. Currently aluminum production is at 85 to 90 per cent of capacity.

New Records—Present capacity of the aluminum industry is estimated at about 1.5 million tons, although planned projects could boost the figure to 1.7 million tons later this year. In the first four months of this year, producers established two new monthly production records. Domestic output in January totaled 116,247 tons, an increase of 5 per cent from the previous month and 5702 tons above any other month. A new record of 122,339 tons was established in March, according to the Bureau of Mines.

Production in the first four months of 1954 amounted to 469,503 tons, compared with 389,000 tons in the similiar 1953 period. If this production rate were continued through the year it would amount to a total production of 1.4 million tons in 1954. That's 90 per cent of present capacity. Aluminum output in recent years has climbed steadily.

What's New?—With defense requirements no longer climbing, who is taking the additional aluminum? Officials of Alcoa answer that by pointing to almost 100 current major architectural projects using aluminum facing. Other aluminum applications in the building field include storm and screen windows and doors, industrial and farm roofing and siding, awnings, hand railings, gutters and downspouts.

On the Road—While aluminum scores gains in construction, another prime consumer of steel is eyed covetously by light metal proponents. The average automobile contains about 20 pounds of aluminum in such applications as pistons. Researchers believe cars may contain up to 125 pounds of the metal in the not-so-distant future.

In using aluminum wiring in its 30-story headquarters building completed last year, Alcoa plans to open new markets in the electrical field.

Competition Grows — Expecting growing competition, with new producers beginning operations, accent now is on salesmanship at aluminum companies. Market development is particularly active in use of aluminum for electrical conductors, buildings, appliances and refrigeration and air-conditioning equipment.

Much aluminum sales talk is built about the metal's stable price. When raw material, labor and production costs rose last year, they forced an increase in price of primary pig aluminum to 20 cents per pound, while primary ingot price became 21½ cents a pound. This represents a hike of only 7½ per cent from the 1939 ingot price.

Copper Continues Strong

Domestic demand continues strong for refined copper. Though there is upward pressure on prices, sales on a delivered-Connecticut-valley basis continue to be made at 30.00c per pound. The 80,000-ton threat of Chilean copper, accumulated when Chile held out for higher prices, has been largely dissipated. Much of it is understood to have gone to dealers and metal brokers at 29.00c per pound at Chilean ports.

Other nonferrous metals were quiet with the exception of zinc which experienced a two or three-day rocket ride in demand from steel galvanizers after the steel wage settlement. Lead and zinc producers are looking forward expectantly for new government stockpiling requests for fiscal 1955.

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STEEL PRICES

Mill prices as reported to STEEL, cents per pound except as otherwise noted. Changes shown in italics.
Code numbers following mill points indicate producing company; key on page 175. Key to footnotes, page 177.

SEMIFINISHED

INGOTS, Carbon Forging (NT)
Fontana,Calif. K1 ....$56.00
Munhall,Pa. U5 .....59.00

INGOTS, Alloy (NT)
Detroit R7 .....$63.00
Fontana,Calif. K1 ....88.00
Midland,Pa. C18 .....62.00
Munhall,Pa. U5 .....65.00

BILLETS, BLOOMS & SLABS
Carbon Rerolling (NT)
Aliquippa,Pa. J5 .....$64.00
Bessemer,Pa. U5 .....64.00
Clairton,Pa. U5 .....64.00
Easley,Ala. T2 .....64.00
Fairfield,Ala. T2 .....64.00
Fontana,Calif. K1 ....70.00
Gary,Ind. U5 .....64.00
Johnstown,Pa. B2 .....64.00
Lackawanna,N.Y. B2 .....64.00
Munhall,Pa. U5 .....64.00
So.Chicago,Ill. U5 .....64.00
So.Duquesne,Pa. U5 .....64.00

Carbon, Forging (NT)
Aliquippa,Pa. J5 ....$75.50
Bessemer,Pa. U5 .....78.00
Buffalo R2 .....78.00
Clairton,Pa. U5 .....78.00
Cleveland R2 .....78.00
Conshohocken,Pa. A3 .....83.00
Detroit R7 .....78.50
Easley,Ala. T2 .....78.00
Fairfield,Ala. T2 .....78.00
Fontana,Calif. K1 ....83.50
Gary,Ind. U5 .....78.00
Geneva,Utah C11 ....75.50
Houston S5 .....83.50
Johnstown,Pa. B2 .....78.00
Lackawanna,N.Y. B2 .....78.00
LosAngeles B3 .....85.00
Munhall,Pa. U5 .....78.00
Seattle B3 .....89.00
So.Chicago W14 .....78.00
So.Chicago R2, U5 .....78.00
So.Duquesne,Pa. U5 .....78.00
So.SanFrancisco B3 ....85.00

Alloy, Forging (NT)
Bethlehem,Pa. B2 ....$92.00
Buffalo R2 .....86.00
Canton,O. T7 .....82.00
Canton,O. R2 .....86.00
Conshohocken,Pa. A3 .....93.00
Detroit R7 .....84.00
Fontana,Calif. K1 ....101.00
Gary,Ind. U5 .....86.00
Houston S5 .....90.00
Ind.Harbor,Ind. Y1 ....82.00
Johnstown,Pa. B2 .....86.00
Lackawanna,N.Y. B2 .....86.00
LosAngeles B3 .....102.00
Massillon,O. R2 .....86.00
Midland,Pa. C18 .....82.00
Munhall,Pa. U5 .....86.00
So.Chicago W14 .....86.00
So.Chicago R2, U5 .....86.00
So.Duquesne,Pa. U5 .....86.00
Struthers,O. Y1 .....82.00
Warren,O. C17 .....82.00

ROUNDS, SEAMLESS TUBE (NT)
Buffalo R2 .....$96.50
Cleveland R2 .....96.50
Fontana,Calif. K1 ....113.50
Gary,Ind. U5 .....96.50
So.Chicago R2 W14 .....96.50
So.Duquesne,Pa. U5 .....96.50

SHEET BAR (NT)
Fontana,Calif. K1 ...$53.18

SKELP
Aliquippa,Pa. J5 .....3.85
Munhall,Pa. U5 .....3.90
Warren,O. R2 .....3.90
Youngstown R2, U5 .....3.90

WIRE RODS
AlabamaCity,Ala. R2 ....4.675
Aliquippa,Pa. J5 .....4.525
Alton,Ill. L1 .....4.70
Buffalo W12 .....4.525
Cleveland A7 .....4.675
Donora,Pa. A7 .....4.675
Fairfield,Ala. T2 .....4.675
Fontana,Calif. K1 ....5.325
Houston S5 .....4.925
Johnstown,Pa. B2 .....4.675
Joliet,Ill. A7 .....4.675
KansasCity,Mo. S5 ....4.925
Kokomo,Ind. C16 ....4.625
LosAngeles B3 .....5.325
Minnequa,Colo. C10 ..4.775
Monessen,Pa. P7 .....4.525
No.Tonawanda,N.Y.B11 4.525
Pittsburg,Calif. C11 ....5.325
Portsmouth P12 .....4.525
Roebling,N.J. R5 ....4.625
So.Chicago,Ill. R2 ....4.675
Sterling,Ill.(1) N15 ....4.675
Struthers,O. Y1 .....4.525
SparrowsPoint,Md. B2 4.775
Torrance,Calif. C11 ....5.475
Worcester,Mass. A7 ....4.975

STRUCTURALS

Carbon Steel Stand. Shapes
AlabamaCity,Ala. R2 ....4.28
Aliquippa,Pa. J5 .....4.10
Bessemer,Ala. T2 .....4.25
Bethlehem,Pa. B2 .....4.30
Clairton,Pa. U5 .....4.25
Fairfield,Ala. T2 .....4.25
Fontana,Calif. K1 ....4.75
Gadsden,Ala.(31) R2 ...4.13
Gary,Ind. U5 .....4.25
Geneva,Utah C11 .....4.25
Houston S5 .....4.50
Ind.Harbor,Ind. I-2 ....4.10
Johnstown,Pa. B2 .....4.30
KansasCity,Mo. S5 ....4.70
Lackawanna,N.Y. B2 .....4.30
LosAngeles B3 .....4.80
Minnequa, Colo. C10 ....4.55
Munhall,Pa. U5 .....4.25
Niles,Calif. P1 .....4.80
Phoenixville,Pa. P4 ....3.80
Seattle B3 .....4.85
So.Chicago W14 .....4.25
So.Chicago W14 .....4.10
So.SanFrancisco B3 ....4.75
Torrance,Calif. C11 ....4.95
Weirton,W.Va. W6 .....4.25

Wide Flange
Bethlehem,Pa. B2 .....4.30
Clairton,Pa. U5 .....4.25
Fontana,Calif. K1 .....5.10
Lackawanna,N.Y. B2 .....4.30
Munhall,Pa. U5 .....4.25
Phoenixville,Pa. P4 ....3.80
So.Chicago,Ill. U5 .....4.25

Alloy Stand. Shapes
Clairton,Pa. U5 .....5.20
Fontana,Calif. K1 .....6.40
Gary,Ind. U5 .....5.20
Munhall,Pa. U5 .....5.20
So.Chicago,Ill. U5 .....5.20

H.S., L. A. Stand. Shapes
Aliquippa,Pa. J5 .....6.175
Bessemer,Ala. T2 .....6.40
Bethlehem,Pa. B2 .....6.45
Clairton,Pa. U5 .....6.40
Fairfield,Ala. T2 .....6.40
Fontana,Calif. K1 ....6.825
Gary,Ind. U5 .....6.40
Geneva,Utah C11 .....6.40
Ind.Harbor,Ind. I-2 ...6.175
Ind.Harbor,Ind. Y1 ...6.675
Johnstown,Pa. B2 .....6.45
Lackawanna,N.Y. B2 .....6.45
LosAngeles B3 .....6.95
Munhall,Pa. U5 .....6.40
Seattle B3 .....6.90
So.Chicago,Ill. W14 .....6.40
So.Chicago,Ill. U5 .....6.40
So.SanFrancisco B3 ....6.40
Struthers,O. Y1 .....6.675

H.S., L. A. Wide Flange
Bethlehem,Pa. B2 .....6.45
Lackawanna,N.Y. B2 .....6.45
Munhall,Pa. U5 .....6.40
So.Chicago,Ill. U5 .....6.40

PILING

Bearing Piles
Munhall,Pa. U5 .....4.25
So.Chicago,Ill. U5 .....4.25

STEEL SHEET PILING
Ind.Harbor,Ind. I-2 ...4.925
Lackawanna,N.Y. B2 .....5.075
Munhall,Pa. U5 .....5.075
So.Chicago,Ill. U5 .....5.075

PLATES

PLATES, Carbon Steel
AlabamaCity,Ala. R2 ....4.255
Aliquippa,Pa. J5 .....4.10
Ashland,Ky.(15) A10 ..4.10
Bessemer,Ala. T2 .....4.225
Buffalo(31) R2 .....4.13
Clairton,Pa. U5 .....4.225
Claymont,Del. C22 .....4.225
Chicago(31) R2 .....4.17
Cleveland J5 .....4.10
Cleveland(31) R2 .....4.285
Coatesville,Pa. L7 .....4.225
Conshohocken,Pa. A3 ....4.225
Ecorse,Mich. G5 .....4.375
Fairfield,Ala. T2 .....4.225
Fontana,Calif.(30) K1 ..4.75
Gadsden,Ala.(31) R2 ...4.13
Gary,Ind. U5 .....4.225
Geneva,Utah C11 .....4.225
GraniteCity,Ill. G4 ....4.30
Harrisburg,Pa. C5 .....3.85
Houston S5 .....4.50
Ind.Harbor,Ind. I-2, Y1.4.10
Johnstown,Pa. B2 .....4.225
Lackawanna,N.Y. B2 ....4.225
LoneStar,Tex. L8 .....4.40
Minnequa,Colo. C10 ....4.95
Munhall,Pa. U5 .....4.225
Pittsburgh J5 .....4.10
Riverdale,Ill. A1 .....4.225
Seattle B3 .....5.00
Sharon,Pa. S3 .....4.10
So.Chicago,Ill. W14 ....4.225
So.Chicago,Ill. W14 ....6.45
SparrowsPoint,Md. B2 ..4.225
Steubenville,O. W10 ....4.10
Warren,O.(31) R2 .....4.625
Weirton,W.Va. W6 .....4.225
Youngstown Y1 .....4.10
Youngstown(31) R2 .....4.275
Youngstown U5 .....4.225

PLATES, Carbon Abras. Resist.
Fontana,Calif. K1 ....5.90
Geneva,Utah C11 .....5.375

PLATES, Wrought Iron
Economy,Pa. B14 .....9.30

PLATES,High-Strength Low-Alloy
Aliquippa,Pa. J5 .....6.25
Bessemer,Ala. T2 .....6.45
Clairton,Pa. U5 .....6.45
Cleveland J5 .....6.25
Conshohocken,Pa. A3 ....6.45
Ecorse,Mich. G5 .....6.60
Fairfield,Ala. T2 .....6.45
Fontana,Calif(30) K1 ..6.95
Gary,Ind. U5 .....6.45
Geneva,Utah C11 .....6.45
Ind.Harbor,Ind. I-2 ....6.25
Ind.Harbor,Ind. Y1 ....6.75
Johnstown,Pa. B2 .....6.45
Lackawanna,N.Y. B2 .....6.45
Munhall,Pa. U5 .....6.45
Pittsburgh J5 .....6.25
Seattle B3 .....7.15
Sharon,Pa. S3 .....6.25
So.Chicago,Ill. W14 .....6.45
So.Chicago,Ill. U5 .....6.45
SparrowsPoint,Md. B2 .....6.45
Youngstown U5 .....6.45
Youngstown Y1 .....6.75

PLATES, Alloy
Claymont, Del. C22 .....5.80
Coatesville,Pa. L7 .....5.80
Fontana,Calif. K1 .....6.60
Gary,Ind. U5 .....5.80
Johnstown,Pa. B2 .....5.80
Munhall,Pa. U5 .....5.80
Sharon,Pa. S3 .....5.55
So.Chicago,Ill. W14 .....5.80
So.Chicago,Ill. U5 .....5.80
SparrowsPoint,Md. B2 .....5.80

FLOOR PLATES
Cleveland J5 .....5.15
Conshohocken,Pa. A3 ....5.275
Harrisburg,Pa. C5 .....5.15
Ind.Harbor,Ind. I-2 ....5.15
Munhall,Pa. U5 .....5.275
So.Chicago,Ill. U5 .....5.275

PLATES, Ingot Iron
Ashland c.l. (15) A10 ..4.35
Ashland l.c.l. (15) A10..4.85
Cleveland c.l. R2 .....4.70
Warren,O. c.l. R2 .....4.70

BARS

BARS, Hot-Rolled Carbon
Aliquippa,Pa. J5 .....4.15
Alton,Ill. L1 .....4.35
Atlanta,Ga. A11 .....4.35
Bessemer,Ala. T2 .....4.30
Birmingham,Ala. C15 ..4.15
Buffalo(31) R2 .....4.33
Canton,O.(31) R2 .....4.46
Chicago(31) R2 .....4.37
Clairton,Pa. U5 .....4.30
Cleveland(31) R2 .....4.36
Detroit R7 .....4.30
Ecorse,Mich. G5 .....4.45
Emeryville,Calif. J7 ....4.90
Fairfield,Ala. T2 .....4.30
Fairless,Pa. U5 .....4.45
Fontana,Calif. K1 .....4.85
Gary,Ind. U5 .....4.30
Gadsden,Ala.(31) R2 ...4.33
Houston S5 .....4.55
Ind.Harbor,Ind. I-2, Y1.4.15
Johnstown,Pa. B2 .....4.30
KansasCity,Mo. S5 ....4.75
Lackawanna,N.Y. B2 .....4.30
LosAngeles B3 .....4.85
Massillon,O.(31) R2 .....4.46
Milton,Pa. M18 .....4.15
Minnequa,Colo. C10 ....4.60
Niles,Calif. P1 .....4.85
N.Tonawanda,N.Y. B11 4.15
Pittsburg,Calif. C11 .....5.00
Pittsburgh J5 .....4.15
Portland,Oreg. O4 .....4.90
Seattle B3, N14, P23 ...4.90
So.Chicago W14 .....4.30
So.Chicago U5 .....4.30
So.SanFran.,Calif. B3 ..4.90
Sterling,Ill.(1) N15 .....4.30
Struthers,O. Y1 .....4.15
Torrance,Calif. C11 .....5.00
Weirton,W.Va. W6 .....4.30
Youngstown U5 .....4.30
Youngstown(31) R2 ....4.20

Bars, Hot-Rolled Alloy
Bethlehem,Pa. B2 .....5.075
Buffalo R2 .....5.105
Canton,O. T7 .....4.875
Canton,O. R2 .....5.115
Chicago R2 .....5.145
Clairton,Pa. U5 .....5.075
Detroit R7 .....4.975
Ecorse,Mich. G5 .....5.225
Fairless,Pa. U5 .....5.225
Fontana,Calif. K1 ....5.925
Gary,Ind. U5 .....5.075
Houston S5 .....5.275
Ind.Harbor,Ind. I-2,Y1.4.875
Johnstown,Pa. B2 .....5.075
KansasCity,Mo. S5 ....5.475
Lackawanna,N.Y. B2 .....5.075
LosAngeles B3 .....5.925
Massillon,O. R2 .....5.115
Midland,Pa. C18 .....4.875
So.Chicago W14 .....5.075
So.Chicago U5 .....5.075
So.Duquesne,Pa. U5 .....5.075
Struthers,O. Y1 .....4.875
Warren,O. C17 .....4.875
Warren R2 .....4.34
Youngstown U5 .....5.075
Youngstown R2 .....4.35

BARS & SMALL SHAPES, H.R.
High-Strength Low-Alloy
Aliquippa,Pa. J5 .....6.225
Bessemer,Ala. T2 .....6.45
Bethlehem,Pa. B2 .....6.45
Clairton,Pa. U5 .....6.45
Ecorse,Mich. G5 .....6.60
Fairfield,Ala. T2 .....6.45
Fontana,Calif. K1 ....7.475
Gary,Ind. U5 .....6.45
Ind Harb.,Ind. Y1 ....6.725
Ind Harb.,Ind. I-2 ....6.225
Johnstown,Pa. B2 .....6.45
Lackawanna,N.Y. B2 .....6.45
LosAngeles B3 .....6.925
Pittsburgh J5 .....6.225
Seattle B3 .....6.975
So.Chicago W14 .....6.45
So.Duquesne,Pa. U5 .....6.45
So.SanFrancisco B3 ..6.975
Struthers,O. Y1 .....6.725
Youngstown U5 .....6.45

BAR SIZE ANGLES; H.R.CARBON
Bethlehem,Pa. B2 .....4.45

BAR SIZE ANGLES; S. Shapes
Aliquippa,Pa. J5 .....4.15
Atlanta A11 .....4.35
Niles,Calif. P1 .....4.85
SanFrancisco S7 .....5.10

BAR SHAPES, Hot-Rolled Alloy
Clairton,Pa. U5 .....5.20
Fontana,Calif. K1 ....5.925
Gary,Ind. U5 .....5.20
Houston S5 .....5.60
KansasCity S5 .....5.60
Youngstown U5 .....5.20

BARS, Cold-Finished Carbon
Ambridge,Pa. W18 ....5.20
BeaverFalls,Pa. M12 ..5.20
BeaverFalls,Pa. R2 .....5.46
Buffalo B5 .....5.45
Camden,N.J. P13 .....5.65
Carnegie,Pa. C12 .....5.20
Chicago W18 .....5.20
Cleveland C20 .....5.20
Cleveland A7 .....5.40
Detroit P17, R7 .....5.35
Detroit B5 .....5.60
Donora,Pa. A7 .....5.40
Elyria,O. W8 .....5.20
FranklinPark,Ill. N5 ....5.40
Gary,Ind. R2 .....5.47
GreenBay Wis. P7 ....5.20
Hammond,Ind. L2, M13 .5.40
Hartford,Conn. R2 .....5.90
Harvey,Ill. B5 .....5.40
LosAngeles R2 .....6.85
LosAngeles S30 .....6.65
Mansfield,Mass. B5 .....5.95
Massillon,O. R8 .....5.20
Massillon,O. R2 .....5.44
Monaca,Pa. S17 .....5.20
Newark,N.J. W18 .....5.65
NewCastle,Pa.(17) B4 ..5.20
Pittsburgh J5 .....5.20
Plymouth,Mich. P5 .....5.45
Putnam,Conn. W18 .....5.75
Readville,Mass. C14 .....5.75
St.Louis,Mo. M5 .....5.50
So.Chicago,Ill. W14 .....5.40
SpringCity,Pa. K3 .....5.65
Struthers,O. Y1 .....5.20
Waukegan,Ill. A7 .....5.40
Worcester,Mass. W19 ....6.10
Youngstown F2, Y1 .....5.20

BARS, Cold-Finished Alloy
(Turned and Ground)
Cumberland,Md.(5) C19 4.45

BARS, Cold-Finished Alloy
Ambridge,Pa. W18 ....6.325
BeaverFalls,Pa. M12 ..6.325
Buffalo B5 .....6.625
Camden,N.J. P13 .....6.50
Canton,O. R2, T7 ....6.325
BeaverFalls,Pa. R2 .....6.385
Bethlehem,Pa. B2 ....6.325
Carnegie,Pa. C12 ....6.325
Chicago W18 .....6.325
Cleveland A7, C20 ....6.325
Detroit R7 .....6.425
Detroit P17 .....6.475
Detroit B5 .....6.825
Donora,Pa. A7 .....6.325
Elyria,O. W8 .....6.325
Gary,Ind. R2 .....6.395
Hammond,Ind. L2, M13 6.625
Hartford,Conn. R2 .....6.775
Harvey,Ill. B5 .....6.625
Lackawanna,N.Y. B2 ..6.325
Mansfield,Mass. B5 .....7.075
Massillon,O. R8 .....6.325
Massillon,O. R2 .....6.365
Midland,Pa. C18 .....6.325
Monaca,Pa. S17 .....6.325
Newark,N.J. W18 .....6.65
Plymouth,Mich. P5 ....6.525
So.Chicago,Ill. R2 ....6.325
So.Chicago W14 .....6.625
SpringCity,Pa. K3 ....6.50
Struthers,O. Y1 .....6.325
Warren,O. C17 .....6.325
Waukegan,Ill. A7 ....6.325
Worcester,Mass. A7 ...6.625
Youngstown F3, Y1 ..6.325

BARS, Reinforcing (fabricators)
AlabamaCity,Ala. R2 ....4.33
Atlanta A11 .....4.35
Birmingham,Ala. C15 ..4.15
Buffalo(31) R2 .....4.33
Chicago(31) R2 .....4.37
Cleveland(31) R2 .....4.36
Emeryville,Calif. J7 ....4.90
Fairless,Pa. U5 .....4.45
Fairfield,Ala. T2 .....4.30
Fontana,Calif. K1 .....4.85
Gadsden,Ala.(31) R2 ...4.18
Gary,Ind. U5 .....4.30
Houston S5 .....4.55
Ind.Harbor,Ind. I-2, Y1.4.15
Johnstown,Pa. B2 .....4.30
KansasCity,Mo. S5 ....4.75
Lackawanna,N.Y. B2 .....4.30
LosAngeles B3 .....4.85
Milton,Pa. M18 .....4.15
Minnequa,Colo. C10 ....4.75
Niles,Calif. P1 .....4.85
Pittsburg,Calif. C11 .....5.00
Pittsburgh J5 .....4.15
SandSprings,Okla. S5 ..5.00
Seattle B3, N14, P23...4.90
So.Duquesne,Pa. U5 .....4.30
So.SanFrancisco B3 ....4.90
SparrowsPoint,Md. B2 ....4.30
Sterling,Ill.(1) N15 .....4.30
Struthers,O. Y1 .....4.15
Torrance,Calif. C11 .....5.00
Youngstown U5 .....4.30
Youngstown(31) R2 .....4.35

BARS, Reinforcing
(Fabricated; to consumers)
Johnstown, ¼-1" B2 ...5.55
KansasCity S5 .....6.35
LosAngeles B3 .....5.80
Marion,O. P11 .....5.55
Seattle N14 .....5.80
Seattle B3, P23 .....5.85
So.SanFrancisco B3 ....5.85
SparrowsPt, ¼-1" B2 ..5.55
Williamsport,Pa. S19 ...5.45

RAIL STEEL BARS
Avis,Pa.(3) J8 .....4.25
ChicagoHts.(3) C2, I-2..4.05
ChicagoHts.(4) C2, I-2..4.15
Ft.Worth,Tex.(26) T4 ..4.65
Franklin,Pa.(3) F5 ....4.05
Franklin,Pa.(4) F5 ....4.15
Marion,O.(3) P11 .....4.15
Moline,Ill.(3) R2 .....4.15
Tonawanda(3,4) B12 ...4.15
Williamsport,Pa.(3) S19.4.25
Williamsport,Pa.(4) S19.5.45

SHEETS

SHEETS, Hot-Rolled Steel
(18 gage and heavier)
AlabamaCity,Ala. R2 ....4.05
Allenport,Pa. P7 .....3.925
Ashland,Ky.(8) A10 ..3.925
Cleveland J5 .....3.925
Cleveland R2 .....4.05
Conshohocken,Pa. A3 ....4.10
Detroit M1 .....4.075
Ecorse,Mich. G5 .....4.20
Fairfield,Ala. T2 .....4.05
Fairless,Pa. U5 .....4.10
Fontana,Calif. K1 .....4.70
Gary,Ind. U5 .....4.05
Geneva,Utah C11 .....4.15
GraniteCity,Ill. G4 ....4.125
Ind.Harbor,Ind. I-2, Y1.3.925
Irvin,Pa. U5 .....4.05

Kokomo,Ind. C16 ....4.025
Lackawanna,N.Y. B2 ....4.05
Munhall,Pa. U5 ....4.05
Newport,Ky. N9 ....3.925
Niles,O. N12 ....3.175
Pittsburg,Calif. C11 ....4.75
Pittsburgh J5 ....3.925
Portsmouth,O. P12 ....3.925
Riverdale,Ill. A1 ....4.05
Sharon,Pa. S3 ....3.925
So.Chicago,Ill. W14 ....4.05
SparrowsPoint,Md. B2 ....4.05
Steubenville,O. W10 ....3.925
Warren,O. R2 ....4.05
Weirton,W.Va. W6 ....4.05
Youngstown Y1 ....3.925
Youngstown U5 ....4.05

SHEETS H.R. (19 ga. lighter)
AlabamaCity,Ala. R2 ....5.35
Dover,O. K1 ....5.05
Kokomo,Ind. C16 ....5.025
Mansfield,O. E6 ....5.05
Niles,O. N12 ....4.775
Torrance,Calif. C11 ....5.875

SHEETS, H.R. (18 ga. heavier) High-Strength Low-Alloy
Cleveland J5 ....5.90
Cleveland R2 ....6.10
Conshohocken,Pa. A3 ....6.15
Ecorse,Mich. G5 ....6.25
Fairfield,Ala. T2 ....6.10
Fairless,Pa. U5 ....6.15
Fontana,Calif. K1 ....6.675
Gary,Ind. U5 ....6.10
Ind.Harbor,Ind. I-2 ....5.90
Ind.Harbor,Ind. Y1 ....6.40
Irvin,Pa. U5 ....6.10
Lackawanna(35) B2 ....6.10
Munhall,Pa. U5 ....6.10
Pittsburgh J5 ....5.90
Sharon,Pa. S3 ....5.90
So.Chicago,Ill. U5 ....6.10
SparrowsPoint(36) B2 ....6.10
Warren,O. R2 ....6.10
Weirton,W.Va. W6 ....6.10
Youngstown U5 ....6.10
Youngstown Y1 ....6.40

SHEETS, Hot-Rolled Ingot Iron (18 Gauge and Heavier)
Ashland,Ky (8) A10 ..4.175
Cleveland R2 ....4.95
Cleveland J5 ....4.775
Ind.Harbor,Ind. I-2 ..4.175
Warren,O R2 ....4.525

SHEETS, Cold-Rolled Steel (Commercial Quality)
Allenport,Pa. P7 ....4.775
Cleveland R2 ....4.95
Cleveland J5 ....4.775
Ecorse,Mich. G5 ....5.10
Fairfield,Ala. T2 ....4.95
Fairless,Pa. U5 ....5.00
Follansbee,W.Va. F4 ..4.775
Fontana,Calif. K1 ....5.875
Gary,Ind. U5 ....4.95
GraniteCity,Ill. G4 ....4.975
Ind.Harbor,Ind. I-2, Y1..4.775
Irvin,Pa. U5 ....4.95
Lackawanna,N.Y. B2 ....4.95
Middletown,O. A10 ....4.775
Pittsburg,Calif. C11 ....5.90
Pittsburgh J5 ....4.775
Portsmouth,O P12 ....4.775
SparrowsPoint,Md. B2 ....4.95
Steubenville,O W10 ....4.775
Warren,O. R2 ....4.95
Weirton,W.Va. W6 ....4.95
Youngstown Y1 ....4.775

SHEETS, Cold-Rolled High-Strength Low-Alloy
Cleveland R2 ....7.50
Cleveland J5 ....7.225
Ecorse,Mich. G5 ....7.65
Fairless,Pa. U5 ....7.55
Fontana,Calif. K1 ....8.275
Gary,Ind. U5 ....7.50
IndianaHarbor,Ind. Y1..7.725
Irvin,Pa. U5 ....7.50
Lackawanna(37) B2 ....7.50
Pittsburgh J5 ....7.225
SparrowsPoint(38) B2 ....7.50
Warren,O. R2 ....7.50
Weirton,W.Va. W6 ....7.50
Youngstown Y1 ....7.725

SHEETS, Cold-Rolled Ingot Iron
Cleveland R3 ....5.375
Middletown,O. A10 ....5.275
Warren,O. R2 ....5.375

SHEETS, Culvert	Cu Alloy	Cu Fe
Ashland,Ky. A10	6.075	....
Canton,O. R2	6.075	6.675
Fairfield T2	6.075	6.325
Gary,Ind. U5	6.075	6.325
Ind.Harbor I-2	6.075	6.325
Irvin,Pa. U5	6.075	6.325
Kokomo,Ind. C16	6.175	....
MartinsFry.,O. W10	6.075	....
Pitts.,Calif. C11	6.825	....
SparrowsPt. B2	*6.25*	....
Torrance,Cal. C11	7.075	....

SHEETS, Culvert	Pure Iron
Ashland,Ky. A10	6.575
Fairfield,Ala. T2	6.325

MartinsFerry,O. W10...6.325

SHEETS, Galvanized Steel Hot-dipped
AlabamaCity,Ala. R2 ....5.45‡
Ashland,Ky. A10 ....5.275*
Butler,Pa. A10 ....5.275†
Canton,O. R2 ....5.45‡
Delphos,O. N16 ....5.775‡
Dover,O. R1 ....5.275‡
Fairfield,Ala. T2 ....5.45
Gary,Ind. U5 ....5.45
GraniteCity,Ill. G4 ....5.475‡
Ind.Harbor,Ind. I-2 ....5.275‡
Irvin,Pa. U5 ....5.45‡
Kokomo,Ind. C16 ....5.375‡
MartinsFerry,O. W13 ....5.275*
Middletown,O. A10 ....5.275†
Niles,O. N12 ....5.275‡
Pittsburg,Calif. C11 ....6.20
SparrowsPt.,Md. B2 ....5.45‡
Steubenville,O. W10 ....5.275‡
Weirton,W.Va. W6 ....5.45

*Continuous and noncontinuous. †Continuous, ‡Noncontinuous

SHEETS, Galvanized High-Strength Low-Alloy
Irvin,Pa. U5 ....8.20
SparrowsPoint(39) B2 ....8.20

SHEETS, Galvanized Ingot Iron
Ashland,Ky.(8) A10 ..5.525
Canton,O. R2 ....6.20

SHEETS, Galvannealed Steel
Canton,O. R2 ....6.20
Irvin,Pa. U5 ....5.825
Kokomo,Ind. C16 ....5.925
Niles,O. N12 ....5.825

SHEETS, GALVANIZED Ingot Iron (Hot-dipped continuous)
Ashland,Ky. A10 ....5.525
Butler,Pa. A10 ....5.525
Middletown,O. A10 ....5.525

SHEETS, Electrogalvanized
Cleveland R2 (28) 6.125
Niles,O. R2 (28) 6.125
Weirton,W.Va. W6 ....5.975

SHEETS, Aluminum Coated
Butler,Pa. A10 ....8.625

SHEETS, Enameling Iron
Ashland,Ky.(8) A10 ..5.175
Cleveland R2 ....5.375
Gary,Ind. U5 ....5.375
GraniteCity,Ill. G4 ....5.375
Ind.Harbor,Ind. I-2 ..5.175
Irvin,Pa. U5 ....5.375
Middletown,O. A10 ....5.175
Niles,O. N12 ....5.625
Youngstown Y1 ....5.175

BLUED STOCK, 29 ga.
Follansbee,W.Va. F4 ...7.20
Follansbee(23) F4 ....6.425
Yorkville,O. W10 ....7.20

SHEETS, Long Terne Steel (Commercial Quality)
BeechBott'm,W.Va.W10 5.675
Gary,Ind. U5 ....5.85
Mansfield,O. E6 ....5.675
Middletown,O. A10 ....5.675
Niles,O. N12 ....5.675
Weirton,W.Va. W6 ....5.85

SHEETS, Long Terne, Ingot Iron
Middletown,O. A10 ....6.075

SHEETS, Well Casing
Fontana,Calif. K1 ....6.20

STRIP

STRIP, Hot-Rolled Carbon
Ala.City,Ala.(27) R2 ....4.05
Allenport,Pa. P7 ....3.925
Alton,Ill. L1 ....4.10
Ashland,Ky.(8) A10 ...3.925
Atlanta A11 ....4.125
Bessemer,Ala. T2 ....4.05
Birmingham C15 ....3.925
Bridgeport,Conn.(10)S15 3.95
Buffalo(27) R2 ....4.05
Carnegie,Pa. S18 ....4.425
Conshohocken,Pa. A3 ....4.175
Detroit M1 ....4.075
Ecorse,Mich. G5 ....4.20
Fairfield,Ala. T2 ....4.05
Fontana,Calif. K1 ....4.70
Gary,Ind. U5 ....4.05
Houston,Tex. S5 ....4.325
Ind.Harbor,Ind. I-2,Y1.3.925
Johnstown,Pa.(25) B2 ....4.05
KansasCity,Mo.(9) S5 ..4.525
Lackw'na,N.Y.(25) B2 ....4.05
LosAngeles(25) B3 ....4.675
Milton,Pa. M18 ....3.925
Minnequa,Colo. C10 ...5.025
NewBritain(10) S15 ...4.15
N.Tonawanda,N.Y. B11 3.925
Pittsburg,Calif. C11 ....4.80
Portsmouth,O. P12 ....3.925
Riverdale,Ill. A1 ....4.05
SanFrancisco S7 ....5.10
Seattle(25) B3, P23 ...4.925
Seattle N14 ....4.925
Sharon,Pa. S3 ....3.925
So.Chicago,Ill. W14 ....4.05
So.SanFrancisco(25)B3 4.675
SparrowsPoint,Md. B2 ....4.05
Torrance,Calif. C11 ....4.80
Warren,O. R2 ....4.05
Weirton,W.Va. W6 ....4.05
Youngstown U5 ....4.05

STRIP, Hot-Rolled Alloy
Bridgeport,Conn.(10)S15 6.45
Carnegie,Pa. S18 ....6.40
Fontana,Calif. K1 ....7.80
Gary,Ind. U5 ....6.70
Houston,Tex. S5 ....6.80
KansasCity,Mo. S5 ....7.00
LosAngeles B3 ....7.60
NewBritn.,Conn.(10)S15 6.45
Sharon,Pa. S3 ....6.40
So.Chicago W14 ....6.70
Youngstown U5 ....6.70

STRIP, Hot-Rolled High-Strength Low-Alloy
Bessemer,Ala. T2 ....6.15
Conshohocken,Pa. A3 ....5.95
Ecorse,Mich. G5 ....6.30
Fairfield,Ala. T2 ....6.15
Fontana,Calif. K1 ....7.05
Gary,Ind. U5 ....6.15
Ind.Harbor,Ind. I-2 ....5.95
Ind.Harbor,Ind. Y1 ....6.45
Lackawanna,N.Y. B2 ....6.15
LosAngeles(25) B3 ....6.70
Seattle(25) B3, P23 ....6.95
Sharon,Pa. S3 .....5.95
So.SanFrancisco(25) B3..6.70
SparrowsPoint,Md. B2 ....6.15
Warren,O. R2 ....6.15
Weirton,W.Va. W6 ....6.15
Youngstown Y1 .....6.45
Youngstown U5 ....6.15

STRIP, Hot-Rolled Ingot Iron
Ashland,Ky.(8) A10 ..4.175
Warren,O. R2 .....4.525

STRIP, Cold-Rolled Carbon
Anderson,Ind. G5 .....5.45
Baltimore T6 .....5.60
Bridgeport,Conn.(10)S15 5.45
Cleveland J5 .....5.45
Cleveland A7 ....5.75
Dearborn,Mich. D3 ....5.90
Detroit M1 .....5.60
Detroit P20 .....5.65
Dover,O. G6 .....5.45
Ecorse,Mich. G5 ....5.90
Follansbee,W.Va. F4 ..5.45
Fontana,Calif. K1 ....7.35
FranklinPark,Ill. T6 ...5.70
Ind.Harbor,Ind. I-2 ....5.70
Indianapolis C8 .....5.60
Lackawanna,N.Y. B2 ....5.75
LosAngeles C1 .....7.50
Mattapan,Mass. T6 ....6.10
Middletown,O. A10 ....5.45
NewBedford,Mass. R10..6.00
NewBritain(10) S15 ....5.45
NewCastle,Pa. B4, E5 ..5.45
NewHaven,Conn. A7 ....6.50
NewHaven,Conn. D2 ...5.90
Pawtucket,R.I. N8, R3..6.10
Pittsburgh J5 .....5.45
Riverdale,Ill. A1 ....5.85
Rome,N.Y.(32) R6 ....5.45
Sharon,Pa. S3 .....5.45
SparrowsPoint,Md. B2 ....5.75
Trenton,N.J. R5 .....7.00
Wall'ford,Conn. W2 ....5.90
Warren,O. R2 .....5.45
Warren,O. R2 ....5.75
Weirton,W.Va. W6 ....5.75
Worcester,Mass. A7 ....6.60
Youngstown C8, Y1 ....5.45

STRIP, Cold-Rolled Alloy Steel
Carnegie,Pa. S18 ....13.00
Cleveland A7 .....12.00
Dover,O. G6 .....12.00
Fontana,Calif. K1 ....13.65
Harrison,N.J. C15 ....12.00
Pawtucket,R.I.(11) N8..12.15
Pawtucket,R.I.(12) N8..12.45
Sharon,Pa. S3 .....12.00
Worcester,Mass. A7 ...12.30
Youngstown C8 .....12.00

STRIP, Cold-Rolled High-Strength Low-Alloy
Cleveland J5 .....7.80
Cleveland A7 .....8.15
Dearborn,Mich. D3 ....8.35
Dover,O. G6 .....8.00
Ecorse,Mich. G5 ....8.75
Lackawanna,N.Y. B2 ....8.425
Pittsburgh J5 .....7.80
Sharon,Pa. S3 .....7.65
SparrowsPoint,Md. B2 ....8.425
Warren,O. R2 .....7.60
Weirton,W.Va. W6 ....8.60
Youngstown Y1 .....8.30

STRIP, Cold-Rolled Ingot Iron
Warren,O. R2 .....6.05

TIGHT COOPERAGE HOOP
Atlanta A11 .....4.65
Riverdale,Ill. A1 ....4.625
Sharon,Pa. S3 .....4.35
Youngstown U5 .....4.35

Key to Producers

A1 Acme Steel Co.
A3 Alan Wood Steel Co.
A4 Allegheny Ludlum Steel
A5 Alloy Metal Wire Co.
A7 American Steel & Wire
A8 Anchor Drawn Steel Co.
A9 Angell Nail & Chaplet
A10 Armco Steel Corp.
A11 Atlantic Steel Co.
A13 American Cladmetals Co.
B1 Babcock & Wilcox Co.
B2 Bethlehem Steel Co.
B3 Beth. Pac. Coast Steel
B4 Blair Strip Steel Co.
B5 Bliss & Laughlin Inc.
B8 Braeburn Alloy Steel
B9 Brainard Steel Div., Sharon Steel Corp.
B10 E. & G. Brooke, Wickwire Spencer Steel Div., Colo. Fuel & Iron
B11 Buffalo Bolt Co., Div., Buffalo-Eclipse Corp.
B12 Buffalo Steel Div., H. K. Porter Co, Inc.
B14 A. M. Byers Co.
B15 J. Bishop & Co.
C1 Calstrip Steel Corp.
C2 Calumet Steel Div., Borg-Warner Corp.
C4 Carpenter Steel Co.
C5 Central Iron & Steel Div. Barium Steel Corp.
C7 Cleve. Cold Rolling Mills
C8 Cold Metal Products Co.
C9 Colonial Steel Co.
C10 Colorado Fuel & Iron
C11 Columbia-Geneva Steel
C12 Columbia Steel & Shaft.
C13 Columbia Tool Steel Co.
C14 Compressed Steel Shaft.
C15 Connors Steel Div. H. K. Porter Co. Inc.
C16 Continental Steel Corp.
C17 Copperweld Steel Co.
C18 Crucible Steel Co.
C19 Cumberland Steel Co.
C20 Cuyahoga Steel & Wire
C22 Claymont Steel Products Dept. Wickwire Spencer Steel Division
C23 Charter Wire Products
C24 G. O. Carlson Inc.
D2 Detroit Steel Corp.
D3 Detroit Tube & Steel
D4 Disston & Sons, Henry
D6 Driver Harris Co.
D7 Dickson Weatherproof Nail Co.
D8 Damascus Tube Co.
D9 Wilbur B. Driver Co.
E1 Eastern Gas & Fuel Assoc.
E2 Eastern Stainless Steel
E4 Electro Metallurgical Co.
E5 Elliott Bros. Steel Co.
E6 Empire Steel Corp.
F2 Firth Sterling Inc.
F3 Fitzsimmons Steel Co.
F4 Follansbee Steel Corp.
F5 Franklin Steel Div., Borg-Warner Corp.
F6 Fretz-Moon Tube Co.
F7 Ft. Howard Steel & Wire
F8 Ft. Wayne Metals Inc.
G2 Globe Steel Tubes Co.
G4 Granite City Steel Co.
G5 Great Lakes Steel Corp.
G6 Greer Steel Co.
H1 Hanna Furnace Corp.
H7 Helical Tube Co.
I-1 Igoe Bros. Inc.
I-2 Inland Steel Co.
I-3 Interlake Iron Corp.
I-4 Ingersoll Steel Div., Borg-Warner Corp.
I-6 Ivins, E., Steel Tube
I-7 Indiana Steel & Wire Co.
J1 Jackson Iron & Steel Co.
J3 Jessop Steel Co.
J4 Johnson Steel & Wire Co.
J5 Jones & Laughlin Steel
J6 Josiyn Mfg. & Supply
J7 Judson Steel Corp.
J8 Jersey Shore Steel Co.
K1 Kaiser Steel Corp.
K2 Keokuk Electro-Metals
K3 Keystone Drawn Steel
K4 Keystone Steel & Wire
K7 Kenmore Metals Corp.
L1 Laclede Steel Co.
L2 LaSalle Steel Co.
L3 Latrobe Steel Co.
L5 Lockhart Iron & Steel
L6 Lone Star Steel Co.
L7 Lukens Steel Co.
M1 McLouth Steel Corp.
M4 Mahoning Valley Steel
M5 Medart Co.
M6 Mercer Pipe Div., Sawhill Tubular Products
M8 Mid-States Steel & Wire
M12 Moltrup Steel Products
M13 Monarch Steel Co.
M14 McInnes Steel Co.
M16 Md. Fine & Special. Wire
M17 Metal Forming Corp.
M18 Milton Steel Prod. Div., Merritt-Chapman & Scott
N1 National-Standard Co.
N2 National Supply Co.
N3 National Tube Div.
N5 Nelsen Steel & Wire Co.
N6 NewEng.HighCarb.Wire
N8 Newman-Crosby Steel
N9 Newport Steel Corp.
N12 Niles Rolling Mill Div.
N14 Nrthwst Steel Roll. Mills
N15 Northwestern S.&W. Co.
N16 New Delphos Mfg. Co.
O3 Oliver Iron & Steel Corp.
O4 Oregon Steel Mills
P1 Pacific States Steel Corp.
P2 Pacific Tube Co.
P4 Phoenix Iron & Steel Co.
P5 Pilgrim Drawn Steel
P6 Pittsburgh Coke & Chem.
P7 Pittsburgh Steel Co.
P11 Pollak Steel Co.
P12 Portsmouth Division Detroit Steel Corp.
P13 Precision Drawn Steel
P14 Pitts. Screw & Bolt Co.
P15 Pittsburgh Metallurgical
P16 Page Steel & Wire Div., Amer. Chain & Cable
P17 Plymouth Steel Co.
P19 Pitts. Rolling Mills
P20 Prod. Steel Strip Corp.
P23 Pacific Steel Rolling
R1 Reeves Steel & Mfg. Co.
R2 Republic Steel Corp.
R3 Rhode Island Steel Corp.
R5 Roebling's Sons, John A.
R6 Rome Strip Steel Co.
R7 Rotary Electric Steel Co.
R8 Reliance Div., Eaton Mfg.
R9 Rome Mfg. Co.
R10 Rodney Metals Inc.
S1 Seneca Wire & Mfg. Co.
S3 Sharon Steel Corp.
S4 Sharon Tube Co.
S5 Sheffield Steel Div., Armco Steel Corp.
S6 Shenango Furnace Co.
S7 Simmons Co.
S8 Simonds Saw & Steel Co.
S12 Spencer Wire Corp.
S13 Standard Forgings Corp.
S14 Standard Tube Co.
S15 Stanley Works
S16 Struthers Iron & Steel
S17 Superior Drawn Steel Co.
S18 Superior Steel Corp.
S19 Sweet's Steel Co.
S20 Southern States Steel
S23 Superior Tube Co.
S25 Stainless Welded Products
S26 Specialty Wire Co. Inc.
S30 Sierra Drawn Steel Corp.
T2 Tenn. Coal & Iron Div.
T3 Tenn. Prod. & Chem.
T4 Texas Steel Co.
T5 Thomas Strip Division, Pittsburgh Steel Co.
T6 Thompson Wire Co.
T7 Timken Roller Bearing
T9 Tonawanda Iron Div., Am. Rad. & Stan. San.
T13 Tube Methods Inc.
U4 Universal-Cyclops Steel
U5 United States Steel Corp.
U6 U. S. Pipe & Foundry
U7 Ulbrich Stainless Steels
V2 Vanadium-Alloys Steel
V3 Vulcan Crucible Steel Co.
W1 Wallace Barnes Co.
W2 Wallingford Steel Co.
W3 Washburn Wire Co.
W4 Washington Steel Corp.
W6 Weirton Steel Co.
W7 W. Va. Steel & Mfg. Co.
W8 West.Auto.Mach.Screw
W9 Wheatland Tube Co.
W10 Wheeling Steel Corp.
W12 Wickwire Spencer Steel Div., Colo. Fuel & Iron
W13 Wilson Steel & Wire Co.
W14 Wisconsin Steel Div., International Harvester
W15 Woodward Iron Co.
W18 Wyckoff Steel Co.
W19 Worcester Pressed Steel
Y1 Youngstown Sheet & Tube

STRIP, Cold-Finished Spring Steel (Annealed)	0.26-0.40C	0.41-0.60C	0.61-0.80C	0.81-1.05C	1.06-1.35C
Baltimore T6	5.60	7.95	8.90	10.85	13.15
Bridgeport,Conn.(10) B15	5.45	7.65	8.60	10.55	12.85
Bristol,Conn. W1	...	...	8.90	10.85	....
Carnegie,Pa. B15	...	7.85	8.60	10.55	12.85
Cleveland A7	5.45	7.65	8.60	10.55	12.85
Cleveland,O. C7	...	8.00	8.60	10.55	12.85
Dearborn,Mich. D3	*5.90*	*8.25*	*9.20*	....	....
Detroit D2	5.65	7.85	8.80	10.55	....
Dover,O. G6	5.45	7.65	8.60	10.55	12.85
FranklinPark,Ill. T6	5.70	7.80	8.75	10.70	13.00
Harrison,N.J. C18	...	...	8.90	10.85	13.15
Indianapolis C8	...	7.80	8.60	10.55	....
Mattapan,Mass. T6	6.10	7.95	8.90	10.85	13.15
NewBritn.,Conn.(10) B15	5.45	7.65	8.60	10.55	12.85
NewCastle,Pa. B4	5.45	7.65	8.60	....	....
NewCastle,Pa. E5	5.45	8.00	8.60	10.55	12.85
NewHaven,Conn. D2	5.90	7.95	8.90	10.85	....
NewYork W3	...	7.95	8.90	10.85	13.15
Pawtucket,R.I.(11) N8	...	7.65	8.60	10.55	12.85
Pawtucket,R.I.(13) N8	6.10	7.95	8.90	10.85	13.15
Riverdale,Ill.(1) A1	*5.85*	*8.05*	*9.00*	*10.95*	*13.25*
Sharon,Pa. S3	5.45	7.65	8.60	10.55	12.85
Trenton,N.J. R5	...	7.95	8.90	10.85	13.15
Wallingford,Conn. W2	5.90	7.95	8.90	10.85	13.15
Warren,O. T5	5.45	7.65	8.60	10.55	12.85
Weirton,W.Va. W6	*5.85*	*8.05*	*9.00*	*10.95*	*13.25*
Worcester,Mass. A7	6.30	7.95	8.90	10.85	13.15
Worcester,Mass. T6	6.10	7.95	8.90	10.85	13.15
Youngstown C8	...	7.65	8.60	10.55	12.65
Spring Steel (Tempered)					
Bristol,Conn. W1	...	...	12.50	15.00	....
Buffalo W12	...	...	12.50	....	....
FranklinPark,Ill. T6	...	...	13.25	15.75	18.75
Harrison,N.J. C18	...	...	12.50	15.00	18.00
NewYork W3	...	...	12.50	15.00	18.00
Trenton,N.J. R5	...	...	12.50	15.00	18.00
Worcester,Mass. T6	...	...	12.50	15.00	18.00
Worcester,Mass. W12	...	...	12.50	....	....
Youngstown C8	...	...	12.85	15.35	18.35

SILICON STEEL

H.R. SHEETS (22 gage) (Cut Lengths)	Field	Armature	Electric	Motor	Dynamo
BeechBottom,W.Va. W10	...	...	8.75	9.75	10.65
Brackenridge,Pa. A4	...	...	8.75	9.75	10.65
IndianaHarbor,Ind. I-2	7.85	8.15	8.75	9.75	....
Mansfield,O. E6	7.85	8.15	8.75	9.75	10.65
Newport,Ky. N9	7.85	8.15	8.75	9.75	10.65
Niles,O. N12	7.85	8.15	8.75	9.75	....
Vandergrift,Pa. U5	...	8.15	8.75	9.75	10.65
Warren,O. R2	7.85	8.15	8.75	9.75	....
Zanesville,O. A10	...	8.15	8.75	9.75	10.65

C.R. COILS & CUT LENGTHS, (22 Ga.) Fully Processed (Semiprocessed ½c lower)	Field	Armature	Electric	Motor	Dynamo
GraniteCity,Ill. G4	8.25*	8.50*	9.20*	10.20*	....
IndianaHarbor,Ind. I-2	8.05	8.40*	9.00*	....	....
Vandergrift,Pa. U5	8.05*	8.90	9.50	10.50	11.40
Warren,O. R2	8.05†	8.90	9.50	10.50	11.40

H.R. SHEETS (22 Gage) (Cut Lengths)	Transformer Grade T-72	T-65	T-58	T-52
BeechBottom,W.Va. W10	11.60	12.15	12.65	13.65
Brackenridge,Pa. A4	11.60	....	....	....
Newport,Ky. N9	11.60	....	....	....
Vandergrift,Pa. U5	11.60	12.15	12.65	13.65
Zanesville,O. A10	11.60	12.15	12.65	13.65

C.R. COILS & CUT LENGTHS (22 Ga.)	T-100	T-90	T-80	T-73	T-72
Butler,Pa. A10	....	....	16.25	16.75	....
Vandergrift,Pa. U5	13.65	14.65	16.25	16.75	12.35‡
Warren,O. R2	....	....	....	....	12.35‡

* Semiprocessed. † Fully processed only. ‡ Coils annealed; semiprocessed ½c lower.

TIN MILL PRODUCTS

TIN PLATE Electrolytic (Base Box)	0.25 lb	0.50 lb	0.75 lb
Aliquippa,Pa. J5	$7.40	$7.65	$8.05
Fairfield,Ala. T2	7.50	7.75	8.15
Fairless,Pa. U5	7.50	7.75	8.15
Gary,Ind. U5	7.40	7.65	8.05
GraniteCity,Ill. G4	7.60	7.85	8.25
IndianaHarbor,Ind. I-2, Y1	7.40	7.65	8.05
Irvin,Pa. U5	7.40	7.65	8.05
Niles,O. R2	7.40	7.65	8.05
Pittsburg,Calif. C11	8.15	8.40	8.80
SparrowsPoint,Md. B2	7.50	7.75	8.15
Weirton,W.Va. W6	7.40	7.65	8.05
Yorkville,O. W10	7.40	7.65	8.05

TIN PLATE, American 1.25 Coke (Base Box)	lb	1.50 lb
Aliquippa,Pa. J5	$8.70	$8.95
Fairfield,Ala. T2	8.80	9.05
Fairless,Pa. U5	8.80	9.05
Gary,Ind. U5	8.70	8.95
Ind.Har. I-2, Y1	8.70	8.95
Irvin,Pa. U5	8.70	8.95
Pitts.,Cal. C11	9.45	9.70
Sp.Pt.,Md. B2	8.80	9.05
Warren,O. R2	8.70	8.95
Weirton,W.Va. W6	8.70	8.95
Yorkville,O. W10	8.70	8.95

BLACK PLATE (Base Box)	
Aliquippa,Pa. J5	$6.50
Fairfield,Ala. T2	6.60
Fairless,Pa. U5	6.60
Gary,Ind. U5	6.50
GraniteCity,Ill. G4	6.70
Ind.Harbor,Ind. I-2, Y1	6.50
Irvin,Pa. U5	6.50
Niles,O. R2	6.50
Pittsburg,Calif. C11	7.25
SparrowsPoint,Md. B2	6.60
Warren,O. R2	6.50
Weirton,W.Va. W6	6.50
Yorkville,O. W10	6.50

HOLLOWARE ENAMELING Black Plate (29 gage)	
Follansbee,W.Va. F4	6.10
Gary,Ind. U5	6.10
GraniteCity,Ill. G4	6.30
Ind.Harbor,Ind. Y1	6.10
Irvin,Pa. U5	6.10
Yorkville,O. W10	6.10

MANUFACTURING TERNES (Special Coated))	
Fairfield,Ala. T2	$7.85
Gary,Ind. U5	7.75
Irvin,Pa. U5	7.75
Yorkville,O. W10	7.75

MANUFACTURING TERNES, 8 lb (Commercial Quality)	
Gary,Ind. U5	$9.75
Yorkville,O. W10	9.75

MANUFACTURING TERNES, LT. Coated, 6 lb (8 lb Coated)	
Yorkville,O. W10	$8.85

ROOFING SHORT TERNES	
Gary,Ind. U5	9.75

WIRE

WIRE, Manufacturers Bright, Low Carbon	
AlabamaCity,Ala. R2	*5.75*
Aliquippa,Pa. J5	5.525
Alton,Ill. L1	5.70
Atlanta A11	5.725
Bartonville,Ill. K4	5.625
Buffalo W12	5.525
Chicago W13	*5.75*
Cleveland C20	5.525
Cleveland A7	*5.75*
Crawfordsville,Ind. M8	5.625
Donora,Pa. A7	*5.75*
Duluth,Minn. A7	*5.75*
Fairfield,Ala. T2	*5.75*
Fostoria,O. (24) S1	5.75
Houston S5	5.925
Jacksonville,Fla. M8	6.05
Johnstown,Pa. B2	*5.75*
Joliet,Ill. A7	*5.75*
KansasCity,Mo. S5	6.125
Kokomo,Ind. C16	5.625
LosAngeles B3	6.475
Minnequa,Colo. C10	5.775
Monessen,Pa. P7	5.525
No.Tonawanda B11	5.525
Palmer,Mass. W12	5.825
Pittsburg,Calif. C11	*6.70*
Portsmouth,O. P12	5.525
Rankin,Pa. A7	*5.75*
So.Chicago,Ill. R2	*5.75*
So.SanFrancisco C10	6.475
SparrowsPoint,Md. B2	*5.85*
Sterling,Ill.(1) N15	*5.75*
Struthers,O. Y1	5.525
Waukegan,Ill. A7	*5.75*
Worcester,Mass. A7	*6.05*

WIRE, MB Spring, High Carbon	
Aliquippa,Pa. J5	6.925
Alton,Ill. L1	7.10
Bartonville,Ill. K4	7.025
Buffalo W12	6.925
Cleveland A7	*7.20*
Donora,Pa. A7	*7.20*
Duluth,Minn. A7	*7.20*
Fostoria,O. S1	6.925
Johnstown,Pa. B2	*7.20*
LosAngeles B3	7.875
Millbury,Mass.(12) N6	7.225
Minnequa,Colo. C10	7.175
Monessen,Pa. P7, P16	6.925
Muncie,Ind. I-7	7.125
Palmer,Mass. W12	7.225
Pittsburg,Calif. C11	*8.15*
Portsmouth,O. P12	6.925
Roebling,N.J. R5	7.225
So.Chicago,Ill. R2	*7.20*
So.SanFran. C10	7.875
SparrowsPt.,Md. B2	*7.30*
Struthers,O. Y1	6.925
Trenton,N.J. A7	*7.50*
Waukegan,Ill. A7	*7.20*
Worcester J4	7.225
Worcester T6, W12	7.225
Worcester A7	*7.50*

WIRE, Upholstery Spring	
Aliquippa,Pa. J5	6.625
Alton,Ill. L1	6.80
Buffalo W12	6.625
Cleveland A7	*6.90*
Donora,Pa. A7	*6.90*
Duluth,Minn. A7	*6.90*
Johnstown,Pa. B2	*6.90*
LosAngeles B3	7.575
Minnequa,Colo. C10	6.80
Monessen,Pa. P7, P16	6.625
NewHaven,Conn. A7	*7.20*
Palmer,Mass. W12	6.925
Pittsburg,Calif. C11	*7.85*
Portsmouth,O. P12	6.625
Roebling,N.J. R5	6.925
So.Chicago,Ill. R2	*6.90*
So.SanFrancisco C10	7.575
SparrowsPoint,Md. B2	*7.00*
Trenton,N.J. A7	*7.20*
Waukegan,Ill. A7	*6.90*
Worcester,Mass. A7	*7.20*

WIRE, Fine & Weaving (8" Coils)	
Alton,Ill. L1	10.75
Bartonville,Ill. K4	10.65
Buffalo W12	10.55
Chicago W13	10.55
Cleveland A7	10.55
Crawfordsville,Ind. M8	10.65
Fostoria,O. S1	10.55
Jacksonville,Fla. M8	11.08
Johnstown,Pa. B2	10.55
Kokomo,Ind. C16	10.55
Minnequa,Colo. C10	10.30
Monessen,Pa. P16	10.55
Muncie,Ind. I-7	10.75
Palmer,Mass. W12	10.85
Roebling,N.J. R5	10.85
So.SanFrancisco C10	10.90
Waukegan,Ill. A7	10.55
Worcester,Mass. A7, T6	10.85

WIRE, Galv'd ACSR for Cores	
Bartonville,Ill. K4	9.50
Buffalo W12	9.50
Johnstown,Pa. B2	9.50
Minnequa,Colo. C10	9.625
Monessen,Pa. P16	9.50
Muncie,Ind. I-7	9.70
Portsmouth,O. D2	9.50
Roebling,N.J. R5	9.80
SparrowsPt.,Md. B2	9.60

ROPE WIRE (A)	
Alton,Ill. L1	9.45
Bartonville,Ill. K4	9.35
Buffalo W12	9.35
Fostoria,O. S1	9.35
Johnstown,Pa. B2	9.35
Monessen,Pa. P7, P16	9.35
Muncie,Ind. I-7	9.55
Palmer,Mass. W12	9.65
Portsmouth,O. P12	9.35
Roebling,N.J. R5	9.65
SparrowsPt. B2	9.45
Struthers,O. Y1	9.35
Worcester J4, T6	9.65

(A) Plow and Mild Plow; add 0.25c for Improved Plow.

WIRE, Tire Bead	
Alton,Ill. L1	12.75
Bartonville,Ill. K4	12.65
Monessen,Pa. P16	12.55
Roebling,N.J. R5	12.85

WIRE, Cold-Rolled Flat	
Anderson,Ind. G6	7.45
Baltimore T6	7.75
Buffalo W12	7.45
Cleveland A7	7.45
Crawfordsville,Ind. M8	7.55
Dover,O. G6	7.45
Fostoria,O. S1	7.45
Kokomo,Ind. C16	7.55
FranklinPark,Ill. T6	7.60
Massillon,O. R8	7.45
Monessen,Pa. P7, P16	7.45
Pawtkt.,R.I.(12) N8	7.75
Trenton,N.J. R5	7.75
Worcester A7, T6, W12	7.75

WIRE, Merchant Quality (6 to 8 gage)	An'ld.	Galv.
Ala.City R2	*6.90*	*7.30***
Aliquippa J5	6.675	7.20*
Atlanta A11	6.775	7.30
Bartonville(48) K4	6.775	7.325
Buffalo W12	6.675	7.075†
Cleveland A7	*6.90*	
Crawfordsville M8	6.775	7.30
Donora,Pa. A7	*6.90*	*7.30†*
Duluth,Minn. A7	*6.90*	*7.30†*
Fairfield T2	*6.90*	*7.30†*
Houston,Tex. S5	7.075	7.475
Jacksonville,Fla. M8	7.20	7.73
JohnstownB2(48)	*6.90*	*7.45**
Joliet,Ill. A7	*6.90*	*7.30†*
KansasCity,Mo. S5	7.275	7.675
Kokomo C16	6.775	7.175†
LosAngeles B3	7.625	....
Minnequa C10	6.925	7.325**
Monessen P7(48)	6.675	7.225
Palmer W12	6.975	7.375†
Pitts.,Calif. C11	*7.85*	*8.25†*
Portsmouth,O.P12	6.675	....
Rankin A7	*6.90*	*7.30†*
So.Chi'go R2	*6.90*	*7.30***
S.S.Frn.(48)C10	7.625	8.025**
Spar'wsPt.B2(48)	*7.00*	*7.55**
Strl'g(1) (48)N15	*6.90*	*7.45*
Struthers,O. Y1	6.675	7.175
Worcester A7	*7.20*	

* Based on 10c zinc; † 5c zinc; ** Subject to zinc equalization extras.

WOVEN FENCE, 9-15½Ga.	Col.
Ala.City,Ala. R2	*146***
Ala.City, 17 ga. R2	235**
Ala.City, 18 ga. R2	245**
Aliq'ppa,Pa.9-14½ga. J5	143*
Atlanta A11	145
Bartonville,Ill. K4	145
Crawfordsville,Ind. M8	145
Donora,Pa. A7	*146†*
Duluth,Minn. A7	*146†*
Fairfield,Ala. T2	*146†*
Houston,Tex. S5	148
Johnstown,Pa. B2	*149*
Johnstown 17 ga., 6" B2	234
Johnstown 4" B2	237
Joliet,Ill. A7	*146†*
KansasCity,Mo. S5	152
Kokomo,Ind. C16	142†
Minnequa,Colo. C10	148**
Monessen,Pa. 9 ga. P7	145
Pittsburg,Calif. C11	*169†*
Rankin,Pa. A7	*146†*
So.Chicago,Ill. R2	*146***
Sterling,Ill.(1) N15	*149*

† Based on 5c zinc; * 11c zinc; ** Subject to zinc equalization extras.

BALE TIES, Single Loop	Col.
AlabamaCity,Ala. R2	*155*
Atlanta A11	151
Bartonville,Ill. K4	151
Crawfordsville,Ind. M8	151
Donora,Pa. A7	*155*
Duluth,Minn. A7	*155*
Fairfield,Ala. T2	*155*
Joliet,Ill. A7	*155*
KansasCity,Mo. S5	161
Kokomo,Ind. C16	151
Minnequa,Colo. C10	154
Pittsburg,Calif. C11	*179*
So.Chicago,Ill. R2	*155*
So.SanFran.,Calif. C10	173
SparrowsPoint,Md. B2	*157*
Sterling,Ill.(1) N15	*155*

WIRE, Barbed	Col.
AlabamaCity R2	*159***
Aliquippa J5	150*
Atlanta A11	158
Bartonville,Ill. K4	158
Crawfordsville,Ind. M8	158
Donora,Pa. A7	*159†*
Duluth,Minn. A7	*159†*
Fairfield,Ala. T2	*159†*
Houston,Tex. S5	161
Johnstown,Pa. B2	*162**
Joliet,Ill. A7	*159†*
KansasCity,Mo. S5	165
Kokomo,Ind. C16	155†
Minnequa,Colo. C10	159**
Monessen,Pa. P7	157
Pittsburg,Calif. C11	*179†*
Rankin,Pa. A7	*159†*
So.Chicago,Ill. R2	*159***
S.SanFrancisco C10	176**
SparrowsPoint,Md. B2	*164**
Sterling,Ill.(1) N15	*162*

† Based on 5c zinc; * 11c zinc; ** Subject to zinc equalization extras.

WIRE (16 gage)	An'ld. Stone	Galv. Stone
Ala.City R2	12.50	14.05**
Aliquippa J5	12.50	14.30*
Bartonville K4	12.60	14.40
Buffalo W12	12.50	....
Cleveland A7	12.50	....
CrawfordsvilleM8	12.50	14.30
Fostoria,O. S1	12.60	14.15
Johnstown B2	12.50	14.35*
Kokomo C16	12.60	14.15†
Minnequa C10	12.75	14.45**
Palmer,Mas.W12	12.50	14.05†
Pitts.,Calif. C11	12.85	14.40†
SparrowsPt. B2	12.60	14.45*
Sterling(1) N15	12.50	14.35
Waukegan A7	12.50	14.05†
Worcester A7	12.80	....

* Based on 11c zinc; † 5c zinc; ** Subject to zinc equalization extras.

NAILS, Stock To dealers & mfrs. (7)	Col.
AlabamaCity,Ala. R2	*137*
Aliquippa,Pa. J5	131
Atlanta A11	133
Bartonville,Ill. K4	133
Chicago,Ill. W13	*137*
Cleveland A9	137
Crawfordsville,Ind. M8	133
Donora,Pa. A7	*137*
Duluth,Minn. A7	*137*
Fairfield,Ala. T2	*137*
Galveston,Tex. D7	139
Houston,Tex. S5	139
Johnstown,Pa. B2	*137*
Joliet,Ill. A7	*137*
KansasCity,Mo. S5	143
Kokomo,Ind. C16	133
Minnequa,Colo. C10	136
Monessen,Pa. P7	131
Pittsburg,Calif. C11	*156*
Rankin,Pa. A7	*137*
So.Chicago,Ill. R2	*137*
SparrowsPt.,Md. B2	*139*
Sterling,Ill.(1) N15	*137*
Worcester,Mass. A7	*143*

NAILS, CUT (100 lb keg) To dealers (33)	
Conshohocken,Pa. A3	*$8.30*
Wheeling,W.Va. W10	8.00

STAPLES, Polished Stock To dealers & mfrs. (7)	Col.
AlabamaCity,Ala. R2	*138*
Aliquippa,Pa. J5	133
Atlanta A11	135
Bartonville,Ill. K4	135
Crawfordsville,Ind. M8	135
Donora,Pa. A7	*138*
Duluth,Minn. A7	*138*
Fairfield,Ala. T2	*138*
Johnstown,Pa. B2	*138*
Joliet,Ill. A7	*138*
Kokomo,Ind. C16	135
Minnequa,Colo. C10	138
Monessen,Pa. P7	133
Pittsburg,Calif. C11	*157*
Rankin,Pa. A7	*138*
So.Chicago,Ill. R2	*138*
SparrowsPt.,Md. B2	*140*
Sterling,Ill.(1) N15	*138*
Worcester,Mass. A7	*144*

FENCE POSTS

	Col.
ChicagoHts.,Ill. C2 I-2	145
Duluth,Minn. A7 (49)	145
Franklin,Pa. F5	145
Johnstown,Pa. B2	145
Marion,O. P11	145
Minnequa,Colo. C10	150
Moline,Ill. R2	150
So.Chicago,Ill. R2	148
Tonawanda,N.Y. B12	145
Williamsport,Pa. S19	148

SEAMLESS STANDARD PIPE, Threaded and Coupled

Carload discounts from list, %

Size—Inches	2		2½		3		3½		4		5		6	
List Per Ft	37c		58.5c		76.5c		92c		$1.09		$1.48		$1.92	
Pounds Per Ft	3.68		5.82		7.62		9.20		10.89		14.81		19.18	
	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv
Aliquippa, Pa. J5 (‡)	15.75	list	19.75	2.5	22.25	5	23.75	6.5	23.75	6.5	23	5.75	25.5	8.25
Ambridge, Pa. N2 (†)	15.75	...	19.75	...	22.25	...	23.75	...	23.75	...	23	...	25.5	...
Lorain, O. N3 (*)	13.5	2.25	17.5	3.25	20	5.75	21.5	7.25	21.5	7.25	20.75	6.5	22.25	9
Youngstown Y1 (††)	15.75	list	19.75	2.5	22.25	5	23.75	6.5	23.75	6.5	23	5.75	25.5	8.25

ELECTRIC WELD STANDARD PIPE, Threaded and Coupled

Carload discounts from list, %

Youngstown R2 (**)	13.5	1.5	17.5	0.75	20.0	3.25	21.5	4.75	21.5	4.75	20.75	4.0	23.25	6.5

BUTTWELD STANDARD PIPE, Threaded and Coupled

Carload discounts from list, %

Size—Inches	⅛		¼		⅜		½		¾		1		1¼		1½	
List Per Ft	5.5c		6c		6c		8.5c		11.5c		17c		23c		27.5c	
Pounds Per Ft	0.24		0.42		0.57		0.85		1.13		1.68		2.28		2.73	
	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv
Aliquippa, Pa. J5 (‡)	...	...	....	....	....	....	26.25	10	29.25	14	31.75	17.5	34.25	18.5	34.75	19.5
Alton, Ill. L1 (§)	...	...	....	....	....	....	24.25	9	27.25	13	29.75	16.5	32.25	17.5	32.75	18.25
Benwood, W.Va. W10(††)	25.5	+0.25	17.75	+5.5	10.25	+10	26.25	11	29.25	15	31.75	18.5	34.25	19.5	34.75	20.25
Butler, Pa. F6‡‡	26.5	list	19.5	+4	12.5	+9	....	..	....	..	....	....	....	....	....	....
Etna, Pa. N2 (†)	...	...	....	...	....	....	26.25	7	29.25	11	31.75	14.5	34.25	16.25	34.75	17.25
Fairless, Pa. N3	...	...	....	...	....	....	21.75	..	24.75	..	27.25	....	29.75	....	30.25	....
Fontana, Calif. K1 (§)	...	...	....	...	....	....	13.25	+3	16.25	1	18.75	4.5	21.25	5.5	21.75	6.5
Ind. Harbor Y1 (††)	...	...	....	...	....	....	25.25	9	28.25	13	30.75	16.5	33.25	17.5	33.75	18.5
Lorain, O, N3 (*)	...	...	....	...	....	....	23.75	13.5	26.75	17.5	29.25	21	31.75	21.5	32.25	21.5
Sharon, Pa. S4 (‡)	26.5	list	19.50	+4.00	12.5	+9	....	..	....	..	....	....	....	....	....	....
Sharon, Pa. M6	...	...	....	...	....	....	26.25	11	29.25	15	31.75	18.5	34.25	19.25	34.75	20.25
Sparrows Pt., Md. B2 (§)	34.5	+1.75	17.5	+6.25	10.5	+10.5	24.25	8	27.25	12	29.75	15.5	32.25	16.5	32.75	17.5
Youngstown R2 (**)	...	...	....	...	....	....	23.75	8.5	26.75	12.5	29.25	16.0	31.75	16.75	32.25	17.75
Youngstown Y1 (††)	...	...	....	...	....	....	26.25	10	29.75	14	31.75	17.5	34.25	18.5	34.75	19.5
Wheatland, Pa. W9 (§)	34.5	+1.75	17.5	+6.25	10.5	+10.5	26.25	10	29.75	14	31.75	17.5	34.25	18.5	34.75	19.5

Size—Inches	2		2½		3		3½		4	
List Per Ft	37c		58.5c		76.5c		92c		$1.09	
Pounds Per Ft	3.68		5.82		7.62		9.20		10.89	
	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv	Blk	Galv
Aliquippa, Pa. J5(‡)	35.25	20	36.75	20	36.75	20	....	....	....	....
Alton, Ill. L1 (§)	33.25	18.75	34.75	18	34.75	18	....	....	....	....
Benwood, W.Va. W10(††)	35.25	20.75	36.75	20.5	36.75	20.5	27.75	11	27.75	11
Etna, Pa. N2 (†)	35.25	17.25	36.75	18.5	36.75	18.5	27.75	9	27.75	9
Fairless, Pa. N3	30.75	....	32.25	....	32.25	...	23.50	....	23.50	....
Fontana, Calif. K1 (§)	22.25	7	23.75	7	23.75	7	....	....	....	....
Ind. Harbor, Ind. Y1 (††)	34.25	19	35.75	19	35.75	19	....	....	....	....
Lorain, O. N3 (*)	32.75	22	34.25	20.5	34.25	20.5	....	....	....	....
Sharon, Pa. M6	35.25	20.75	36.75	20.5	36.75	20.5	....	....	....	....
Sparrows Pt., Md. B2 (§)	32.25	18	34.75	18	34.75	18	25.75	8.5	25.75	8.5
Youngstown R2 (**)	32.75	18.25	34.25	18.0	34.25	18.0	25.50	8.75	25.50	8.75
Youngstown Y1 (††)	35.25	20	36.75	20	36.75	20	....	....	....	....
Wheatland, Pa. W9 (‡)	35.25	20	36.75	20	36.75	20	....	....	....	....

Galvanized pipe discounts based on zinc price of: (†), 14c; (‡), 11c to under 12c; (*), 5c; (§), 10c to under 11c; (††), 10.50c-11.50c; (**), 9.50c; with discounts adjusted on price of zinc at time of shipment; (‡‡), 11c.

BOILER TUBES

Net base c.l. prices, dollars per 100 ft, mill; minimum wall thickness, cut length 10 to 24 ft, inclusive.

O.D. In.	B.W. Gage	Seamless H.R.	Seamless C.D.	Elec. Weld H.R.
1	13	....	19.02	18.44
1¼	13	....	22.53	18.12
1½	13	20.65	24.91	20.01
1¾	13	24.40	29.43	23.66
2	13	27.34	32.98	26.51
2¼	13	30.80	37.15	29.86
2½	12	33.43	40.32	32.41
2¾	12	36.82	44.41	35.70
2¾	12	39.87	48.09	38.66
3	12	42.52	51.28	41.23

RAILWAY MATERIALS

RAILS	Std. No. 1	Std. No. 2	Std. Toe Rails All No. 2	Std. Toe Rails 60 lb Under
Bessemer, Pa. U5	*4.45*	*4.35*	*4.40*	*5.35*
Ensley, Ala. T2	*4.45*	*4.35*	....	*5.35*
Fairfield, Ala. T2				*5.35*
Gary, Ind. U5	*4.45*	*4.35*	*4.40*	
Huntington, W.Va. W7	....	....	....	5.20
Indiana Harbor, Ind. I-2	4.325	4.225	4.275	
Johnstown, Pa. B2	....	....	....(16)	5.20
Lackawanna, N.Y. B2	*4.45*	*4.35*	....	*5.35*
Minnequa, Colo. C10	4.325	4.225	....	5.70
Steelton, Pa. B2	*4.45*	*4.35*	....	
Williamsport, Pa. S19	....	....	....	5.20

TIE PLATES	
Fairfield, Ala. T2	*5.275*
Gary, Ind. U5	*5.275*
Ind. Harbor, Ind. I-2	5.125
Lackawanna, N.Y. B2	*5.275*
Minnequa, Colo. C10	5.125
Seattle B3	5.275
Steelton, Pa. B2	*5.275*
Torrance, Calif. C11	*5.425*

TRACK BOLTS (20) Treated	
Cleveland R2	11.00
Kansas City, Mo. S5	11.00
Lebanon, Pa. B2	11.00
Minnequa, Colo. C10	11.00
Pittsburgh C3, P14	11.00
Seattle, Wash. B3	11.50

JOINT BARS	
Bessemer, Pa. U5	*5.425*
Fairfield, Ala. T2	*5.425*
Ind. Harbor, Ind. I-2	5.275
Joliet, Ill. U5	*5.425*
Lackawanna, N.Y. B2	*5.425*
Minnequa, Colo. C10	5.275
Steelton, Pa. B2	*5.425*

AXLES	
Ind. Harbor, Ind. S13	*6.75*
Johnstown, Pa. B2	*6.75*

STANDARD TRACK SPIKES	
Fairfield, Ala. T2	*7.30*
Ind. Harbor, Ind. I-2, Y1	7.05
Kansas City, Mo. S5	7.30
Lebanon, Pa. B2	*7.30*
Minnequa, Colo. C10	7.05
Pittsburgh J5	7.05
Seattle B3	7.55
So. Chicago, Ill. R2	*7.30*
Struthers, O. Y1	7.05
Youngstown R2	*7.30*

RIVETS

F.o.b. Cleveland, and/or freight equalized with Pittsburgh, f.o.b. Chicago, and/or freight equalized with Birmingham except where equalization is too great. Structural ½-in., larger 8.90c ⅜-in. under ..... 26.5 off

WASHERS, WROUGHT

F.o.b. shipping point, to jobbers ..... List

BOLTS, NUTS

CARRIAGE, MACHINE BOLTS
(F.o.b. midwestern plants, per cent off list for less than case lots to consumers)

6 in. and shorter:	
½-in. & smaller diam.	4
⅝-in. & ¾-in.	5
⅞-in. and larger	3
Longer than 6 in.:	
All diameters	+4
Lag bolts, all diams.:	
6 in. and shorter	12
Over 6 in. long	8
Ribbed Necked Carriage	5
Blank	25
Plow	25
Step, Elevator, Tap and Sleigh Shoe	12
Tire Bolts	List
Boiler & Fitting-Up Bolts	23

NUTS

H.P. and C.P., regular & heavy:	
Square, all sizes	58
H.P., Hex, regular & heavy:	
¾" and smaller	58
⅞" to 1¼", inclusive	60
1⅜" to 1½", inclusive	62
1⅝" and larger	58
C.P. Hex regular & heavy:	
All sizes	58
Hot Galv. Nuts (all types):	
¾" to 1½", inclusive	40
⅞" to 1½", inclusive	43
Finished Hex Nuts:	
New standard, all sizes	58
Semifinished & Slotted Hex:	
Regular and heavy, all sizes	58

SQUARE HEAD SET SCREWS
(Packaged; per cent off list)

1 in. diam. x 6 in. and shorter	34
1 in. and smaller diam. x over 6 in.	20

HEADLESS SET SCREWS
(Packaged; per cent off list)

No. 10 and smaller	34
¼ in. diam & larger	14
N.F. thread, all diams.	8

STEEL STOVE BOLTS
(F.o.b. plant, per cent off list in packages)

Plain finish	47.5 x 10
Plated finishes	30 x 10

HEXAGON CAP SCREWS
(1020 steel; packaged; per cent off list)

6 in. or shorter:	
⅝-in. & smaller	38
¾-in. through 1 in.	22
Longer than 6 in.:	
⅝-in. and smaller	20
¾-in. through 1 in.	7

METAL POWDERS

(Per pound, f.o.b. shipping point in ton lots for minus 100 mesh, except as otherwise noted)

Sponge Iron:	Cents
98+% Fe, annealed	18.00
Unannealed	
Minus 100 mesh	14.50
Minus 35 mesh	10.25
Minus 20 mesh	10.00
Swedish, c.l.f. N. Y., c.l., in bags	11.25
Domestic (Swedish), f.o.b. Riverton, N. J., in bags	11.25
Electrolytic iron:	
Melting stock, 99.91% Fe, irregular fragments of ⅛ in. x 1.3 in.	22.00
Annealed, 99.3% Fe	36.50
Unannealed (99+% Fe)	32.50
Unannealed (99+% Fe) (minus 325 mesh)	52.00
Powder Flakes (minus 16, plus 100 mesh)	31.00
Carbonyl Iron:	
97.9-99.8% size 5 to 10 microns	83.00-148.00
Aluminum:	
Atomized, 500 lb drums, frgt. allowed:	
Carlots	32.00
Ton lots	34.00
Antimony, 500 lb lots	32.00*
Brass, ¼-ton lots	26.75-37.50†
Bronze, ¼-ton lots	31.00-39.00†
Copper:	
Electrolytic	13.50*
Reduced	13.50*
Lead	7.50*
Manganese:	
Minus 35 mesh	61.00
Minus 100 mesh	67.00
Minus 200 mesh	72.00
Nickel, unannealed	89.50
Nickel-Silver, ¼-ton lots	45.75‡
Nickel-Silver, ¼-ton lots	48.50**
Phosphor-Bronze, ¼-ton lots	58.50
Silicon	43.50
Solder	8.50*
Stainless Steel, 302	91.00
Tin	14.50*
Zinc, ¼-ton lots	18.25-32.00†
Tungsten	Dollars
Melting grade, 99% 60 to 200 mesh:	
1000 lb and over	4.95
Less than 1000 lb	5.10
Chromium electrolytic 99.2% Cr min.	3.50

*Plus cost of metal. †Depending on composition. ‡Depending on mesh. §70% Cu, 20% Zn, 10% Ni; **64% Cu, 18% Zn, 18% Ni.

Footnotes

(1) Chicago base.
(2) Angles, flat, bands.
(3) Merchant.
(4) Reinforcing.
(5) 1⅛" to 1 7/16"; 1 7/16" to 1 15/16" 4.35c; 1 15/16" to 7 5/16" 4.95c.
(6) Chicago or Birm. base.
(7) To jobbers, 3 cols. lower.
(8) 16 gage and heavier.
(9) 6 in. and narrower.
(10) Pittsburgh base.
(11) Cleveland & Pitts. base.
(12) Worcester, Mass. base.
(13) Add 0.25c for 17 Ga. & heavier.
(14) Gage 0.143 to 0.349 in.; for gage 0.142 and lighter, 5.90c.
(15) ⅜" and thinner.
(16) 48 lb and under.
(17) Flats only; 0.25 in. & heavier.
(18) To dealers.
(19) Chicago & Pitts. base.
(20) 0.25c off for untreated.
(21) New Haven, Conn., base.
(22) Del. San Francisco Bay area.
(23) 30 Ga. 24" wide.
(24) Deduct 0.10c, finer than 15 Ga.
(25) Bar mill bands.
(26) Reinforcing mill lengths, to fabricators; to consumers, 5.40c.
(27) Bar mill sizes.
(28) Bonderized
(29) Youngstown base.
(30) Sheared; for universal mill add 0.45c for carbon and 0.35c for H.S.-L.A.
(31) Base; deld. within mill county.
(32) Buffalo base.
(33) To jobbers, deduct 20c.
(34) 9.00c for cut lengths.
(35) 72" and narrower.
(36) 54" and narrower.
(37) 13 gage & lighter; 60" & narrower.
(38) 14 gage & lighter; 48" and narrower.
(39) 48" and narrower.
(40) Lighter than 0.035"; 0.035" and heavier, 0.25c higher.
(41) 9.10c for cut lengths.
(42) 6-7 gage.
(43) T-post; deduct 2 cols for U-post.

STAINLESS STEEL MILL PRICES

(Representative prices cents per pound; subject to current lists of extras)

AISI Type	Rerolling Ingots	Rerolling Slabs, Billets	Forging Billets	Seamless Tube Billets	H.R. Strip	Shapes; H.R. & C.F. Bars; Wire	Plates	Sheets	C.R. Strip; Flat Wire
301	16.25	20.50	29.50	34.25	29.75	35.25	37.25	41.25	38.25
302	17.25	22.75	29.75	34.50	32.00	35.50	37.50	41.50	41.50
302B	18.50	24.50	30.50	34.50	35.00	35.50	37.50	44.75	44.75
303	18.75	24.75	32.25	37.25	36.75	38.25	39.75	48.75	45.50
304	18.25	23.75	31.00	36.00	34.25	37.25	39.75	43.75	43.75
304L	....	....	36.75	....	....	42.75	45.25	49.00	49.00
306	19.50	25.50	....	36.25	37.00	37.50	42.00	51.75	46.75
308	19.75	26.25	35.25	40.75	38.00	42.50	48.00	48.00	48.00
309	26.50	34.75	43.25	49.25	49.25	50.50	53.75	62.00	62.00
309S	28.50	37.50	47.50	54.50	54.00	55.50	59.00	68.50	68.50
310	33.00	43.25	56.75	66.25	62.75	67.50	69.00	72.25	72.25
314	....	....	....	....	....	....	....	99.00	74.50	....
316	25.00	36.25	46.75	54.50	53.25	55.50	59.00	62.75	62.75
316L	....	....	52.50	....	56.25	61.00	64.25	67.75	67.75
317	33.00	43.50	58.25	66.75	67.50	68.25	70.75	77.00	77.00
318	33.50	44.00	55.25	64.50	66.25	66.50	68.75	80.25	80.25
321	22.75	29.50	35.25	40.75	41.00	42.00	46.00	50.50	50.50
330	....	....	....	58.00	....	....	68.50	70.00	73.75	77.75
347	24.50	32.25	39.50	45.75	46.50	46.75	51.25	59.25	59.25
403	....	....	....	27.00	30.75	....	32.00	34.25	44.00	41.25
405	18.50	21.75	25.25	29.25	30.50	30.25	31.75	39.75	39.75
410	14.00	18.25	24.00	27.75	26.25	28.75	30.00	34.25	34.25
416	....	....	....	24.50	28.25	....	29.25	30.50	41.25	41.25
420	22.00	28.50	29.25	34.00	35.50	35.00	38.50	52.75	52.75
430	14.25	18.50	24.50	28.25	27.00	29.25	30.50	34.75	34.75
430F	....	18.75	25.00	28.75	....	29.75	31.00	44.00	44.00
431	14.50	26.50	25.00	28.25	27.50	29.25	30.50	35.25	35.25
440A,B,C	....	26.50	29.25	34.00	....	35.00	38.50	49.25	52.75
442	....	....	....	28.00	....	....	30.50	35.25	48.25	47.75
446	....	....	....	33.75	38.25	50.25	39.50	40.75	59.75	59.75
501	....	....	....	14.00	14.50	21.25	16.00	18.25	29.00	29.00
502	....	....	....	15.25	16.00	22.25	17.00	20.00	30.00	30.00

Stainless Steel Producers Are: Allegheny Ludlum Steel Corp.; Alloy Metal Wire Co. Inc.; American Steel & Wire Div., U. S. Steel Corp.; Armco Steel Corp.; Babcock & Wilcox Co.; Bethlehem Steel Co.; J. Bishop & Co.; G. O. Carlson Inc.; Carpenter Steel Co.; Charter Wire Products Co.; Cold Metal Products Co.; Crucible Steel Co. of America; Damascus Tube Co.; Wilbur B. Driver Co.; Driver-Harris Co.; Eastern Stainless Steel Corp.; Ellwood Ivins Steel Tube Works Inc.; Firth Sterling Inc.; Ft. Wayne Metals Inc.; Globe Steel Tubes Co.; Helical Tube Co.; Indiana Steel & Wire Co.; Ingersoll Steel Div., Borg Warner Corp.; Jessop Steel Co.; Johnson Steel & Wire Co. Inc.; Joslyn Mfg. & Supply Co.; Kenmore Metals Corp.; Maryland Fine & Specialty Wire Co.; McLouth Steel Corp.; Metal Forming Corp.; McInnes Steel Co.; National-Standard Co.; National Tube Div., U. S. Steel Corp.; Newman-Crosby Steel Co.; Pacific Tube Co.; Page Steel & Wire Div., American Chain & Cable Co. Inc.; Pittsburgh Rolling Mills Inc.; Republic Steel Corp.; Rodney Metals Inc.; Rome Mfg. Co.; Rotary Electric Steel Co.; Sharon Steel Corp.; Sawhill Tubular Products Inc.; Simonds Saw & Steel Co.; Specialty Wire Co. Inc.; Spencer Wire Corp.; Stainless Welded Products Inc.; Standard Tube Co.; Superior Steel Corp.; Superior Tube Co.; Timken Roller Bearing Co.; Trent Tube Co., Tube Methods Inc.; Ulbrich Stainless Steels; United States Steel Corp.; Universal-Cyclops Steel Co.; Wallingford Steel Co.; Washington Steel Corp.

CLAD STEEL

Cladding Stainless	Plates: Carbon Base 10%	Plates: Carbon Base 20%	Sheets: Carbon Base 20%	Sheets: Copper Base Both Sides
302	....	31.00	31.00	77.00
304	27.60	32.50-32.70	32.50	77.00
310	36.50	41.00	.....	144.00
316	32.60	37.70-42.75	42.75	....
318	37.00	42.20	.....	....
321	29.80	34.40-37.00	37.00	111.00
347	30.40	35.50-40.50	40.50	130.00
405	23.40	30.60	.....	....
410	22.90	30.10	.....	....
430	22.90	30.10	.....	....
Inconel	41.23	54.18	.....	165.00
Nickel	37.50	50.90	.....	....
Monel	38.90	51.80	.....	....
Copper*	....	.....	46.00	....

	Strip, Carbon Base: Cold Rolled 10%	Cold Rolled Both Sides	Hot-Rolled 10%	Hot-Rolled Both Sides
Copper*	27.85	35.85	24.00	32.25

* Deoxidized. Production points: Stainless sheets, New Castle, Ind. I-4; stainless-clad plates, Claymont, Del. C22, Coatesville, Pa. L7, New Castle, Ind. I-4 and Washington, Pa. J3; nickel, inconel, monel-clad plates, Coatesville L7; Copper-clad strip, Carnegie, Pa. S15. Production point for copper-base sheets is Carnegie, Pa. A13.

TOOL STEEL

Grade	$ per lb	Grade	$ per lb
Regular Carbon	0.25	5% Cr Hot Work	0.39
Extra Carbon	0.30	W-Cr Hot Work	0.41
Special Carbon	0.355	V-Cr Hot Work	0.42-.43
Oil Hardening	0.37-.390	Hi-Carbon-Cr	0.665-.70

Grade by Analysis (%) W	Cr	V	Co	Mo	$ per lb
20.25	4.25	1.6	12.25	...	3.875
18.25	4.25	1	4.75	...	2.160-2.320
18	4	2	9	...	2.515
18	4	2	....	...	1.640
18	4	1	....	...	1.480
13.5	4	3	....	...	1.735
6.4	4.5	1.9	....	5	1.005-1.055
6	4	3	....	6	1.240
2	1.4	1.2	....	...	0.495
1.5	4	1	....	8.5	0.865-0.895

Tool Steel producers include: A4, A8, B2, B8, C4, C9, C13, C18, D4, F2, J3, L3, M14, S8, U4, V2 and V3.

PIG IRON

Gross Ton F.o.b. furnace prices in dollars per gross ton, as reported to STEEL. Minimum delivered prices are approximate and do not include 3% federal tax.

	Basic	No. 2 Foundry	Malleable	Bessemer
Birmingham District				
AlabamaCity R2	52.38	52.88	....	....
Birmingham R2	52.38	52.88	....	....
Birmingham U6	....	52.88	....	....
Woodward,Ala. W15	52.38	52.88	56.50†	....
Cincinnati, del.	....	60.43	....	....
Buffalo District				
Buffalo R2, H1	56.00	56.50	57.00	....
Tonawanda,N.Y. W12	56.00	56.50	57.00	....
No.Tonawanda,N.Y. T9	....	56.50	57.00	....
Boston, del.	66.65	67.15	67.65	....
Rochester,N.Y., del.	59.02	59.52	60.02	....
Syracuse,N.Y., del.	60.12	60.62	61.12	....
Chicago District				
Chicago I-3	56.00	56.50	56.50	57.00
Gary,Ind. U5	56.00	....	56.50	....
IndianaHarbor,Ind. I-2	56.00	....	56.50	....
So.Chicago,Ill. W14, Y1	56.00	56.50	56.50	....
So.Chicago,Ill. U5	56.00	....	56.50	57.00
Milwaukee, del	56.17	56.67	58.67	59.17
Muskegon,Mich., del.	....	62.80	62.80	....
Cleveland District				
Cleveland A7	56.00	56.50	56.50	57.00
Cleveland R3	56.00	56.50	56.50	....
Akron,O. del. from Cleve.	56.75	59.25	59.25	59.75
Lorain,O. N3	56.00	....	....	57.00
Mid-Atlantic District				
Bethlehem,Pa. B2	58.00	58.50	59.00	59.50
NewYork, del.	....	62.28	62.78	....
Newark, del.	61.02	61.52	62.02	62.52
Birdsboro,Pa. B10	58.00	58.50	....	....
Steelton,Pa. B2	58.00	58.50	59.00	59.50
Swedeland,Pa. A3	58.00	58.50	59.00	59.50
Philadelphia, del.	59.66	60.16	60.66	61.16
Troy,N.Y. R2	58.00	58.50	59.00	....
Pittsburgh District				
Neville Island,Pa. P6	56.00	56.50	56.50	57.00
Pittsburgh (N&S sides), Ambridge, Aliquippa, del.	57.37	57.87	57.87	58.37
McKeesRocks, del.	57.04	57.54	57.54	58.04
Lawrenceville,Homestead, Wilmerding,Monaca, del.	57.66	58.16	58.16	58.66
Verona,Trafford, del.	58.19	58.69	58.69	59.19
Brackenridge, del.	58.45	58.95	58.95	59.45
Bessemer,Pa. U5	56.00	....	56.50	57.00
Clairton,Rankin,So.Duquesne,Pa. U5	56.00	....	....	....
McKeesport,Pa. N3	56.00	....	....	57.00
Midland,Pa. C18	56.00	....	....	....
Monessen,Pa. P7	56.00	....	....	....
Youngstown District				
Hubbard,O. Y1	....	....	56.50	....
Sharpsville,Pa. S6	56.00	56.50	56.50	57.00
Youngstown Y1	....	....	56.50	57.00
Youngstown U5	56.00	....	....	57.00
Mansfield,O., del.	60.90	....	61.40	61.90
Duluth I-3	56.00	56.50	56.50	57.00
Erie,Pa. I-3	56.00	56.50	56.50	57.00
Everett,Mass. E1	*60.50*	*61.00*	*61.50*	....
Fontana,Calif. K1	62.00	62.50	....	....
Geneva,Utah C11	56.00	56.50	....	....
GraniteCity,Ill. G4	57.90	58.40	58.90	....
Ironton,Utah C11	56.00	56.50	....	....
LoneStar,Texas L6	52.00	52.50*	52.50	....
Minnequa,Colo. C10	58.00	59.00	59.00	....
Rockwood,Tenn. T3	....	....	56.50	....
Toledo,O. I-3	56.00	56.50	56.50	57.00
Cincinnati, del.	61.76	62.26	....	....

* Low phos, southern grade. † Phos., 0.30 max.

PIG IRON DIFFERENTIALS

Silicon: Add 50 cents per ton for each 0.25% Si or percentage thereof over base grade, 1.75-2.25%, except on low phos iron on which base is 1.75-2.00%.
Phosphorus: Deduct 38 cents per ton for P content of 0.70% and over.
Manganese: Add 50 cents per ton for each 0.50% manganese over 1% or portion thereof.
Nickel: Under 0.50% no extra; 0.50-0.74%, incl., add $2 per ton and each additional 0.25%, add $1 per ton.

BLAST FURNACE SILVERY PIG IRON, Gross Ton

(Base 6.0-6.50% silicon; add $1.50 for each 0.5% Si; 75 cents for each 0.5% Mn over 1%)

Jackson,O. G2, J1	$47.00
Buffalo H1	48.25

ELECTRIC FURNACE SILVERY PIG IRON, Gross Ton

(Base 14.01-14.50% silicon; add $1 for each 0.5% Si to 18%; $1.45 for each 0.5% Mn over 1%; $2 per gross ton premium for 0.045% max P)

NiagaraFalls,N.Y. P15	$87.50
Keokuk,Iowa, Openhearth & Fdry, freight allowed K2	92.00
Keokuk, OH & Fdry, 12½ lb pigiets, 16% Si, frgt allowed K2	95.00
Wenatchee,Wash. OH & Fdry, freight allowed K2	92.00

LOW PHOSPHORUS PIG IRON, Gross Ton

Cleveland, intermediate A7	$61.00
Rockwood,Tenn. T3	70.00
Steelton,Pa. B2	64.00
Philadelphia, del.	64.00
Troy,N.Y. R2	64.00

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Canadian Distributor — Railway & Power Engineering Corp., Ltd.

WAREHOUSE STEEL PRODUCTS

(Representative prices, cents per pound, subject to extras, f.o.b. warehouse. City delivery charges are 20 cents per 100 lb except: New York, 30 cents; Philadelphia, 25 cents; Birmingham, Erie, St. Paul, 15 cents; Seattle and Spokane, Wash., no charge.)

	SHEETS				STRIP		BARS			Standard Structural Shapes	PLATES	
	Hot Rolled	Cold Rolled	Gal. 10 Ga.†	Stainless Type 302	H.R.*	C.R.*	H.R. Rds.	C.F. Rds.§	H.R. Alloy 4140††‡		Carbon	Floor
Baltimore	6.20	7.12	7.78	....	7.00	...	6.86	8.17[6]	12.04	6.98	6.85	7.98
Birmingham	6.10	7.00	8.00[5]	....	6.30	...	6.15	8.90	....	6.35	6.35	8.25
Boston	6.89	7.83	9.18	44.78[9]	7.13	...	6.87	8.35	12.13	7.06	7.13	8.28
Buffalo	6.11	7.10	8.65	....	6.50	...	6.27	7.45	11.97	6.49	6.45	7.80
Charlotte, N. C.	6.95	7.80	8.69	....	6.90	...	7.10	8.37	....	7.10	7.10	8.37
Chicago	6.18	7.12	7.95	43.55	6.42	...	6.25	7.30	11.80	6.46	6.33	7.46
Cincinnati	6.30	7.11	8.00	43.80	6.66	...	6.52	7.80	11.85	6.93	6.62	7.71
Cleveland	6.18	7.12	8.25	45.66	6.58	...	6.34	7.40	11.74	6.79	6.50	7.63
Detroit	6.38	7.29	8.22	....	6.69	7.36	6.56	7.60	11.97	6.91	6.80	7.89
Erie, Pa.	6.15	...	8.25	....	6.45	...	6.28	7.25[4]	....	6.46	6.33	7.46
Houston	7.15	7.60	9.23	....	7.45	9.30	7.45	9.30	....	7.35	7.20	8.56
Los Angeles	7.25	9.00	8.85	50.15	7.55	11.20	7.15	9.10	12.90	7.35	7.20	9.25
Milwaukee	6.35	7.29	8.12	....	6.59	...	6.45	7.57	11.77	6.63	6.50	7.63
Moline, Ill.	6.53	7.47	8.30	....	6.77	...	6.63	7.65	....	6.81	6.68	...
New York	6.78	7.52	8.37	44.15	7.16	...	7.06	8.43[3]	11.99	6.90	6.99	8.30
Norfolk, Va.	6.90	...	...	....	7.00	...	7.00	8.50	....	7.00	7.00	7.85
Philadelphia	6.00‡‡	7.13	7.87	41.98[9]	6.40‡‡	8.80	6.52‡‡	8.19[6]	11.74	6.42‡‡	6.30‡‡	7.34‡‡
Pittsburgh	6.18	7.12	8.00	50.50	6.55	...	6.28	7.65	11.60	6.46	6.33	7.46**
Portland, Oreg.	7.60	8.45	9.05	....	7.65	...	7.35	10.65	....	7.25	7.25	9.15
Richmond, Va.	6.50	...	8.67	....	7.10	...	7.05	8.20	....	7.10	6.85	8.20
St. Louis	6.48	7.42	8.25	43.89	6.72	...	6.58	7.70	11.90	6.86	6.73	7.86
St. Paul	6.84	7.78	8.61	....	7.06	...	6.94	8.06	....	7.12	6.99	8.12
San Francisco	7.35	8.70	8.95	50.15	7.60	...	7.15	9.75	12.90	7.25	7.20	9.25
Seattle	8.15	9.50	9.80	50.50	8.00	...	7.60	10.65	13.35	7.50	7.60	9.40
Spokane	8.15	9.40[8]	9.80	....	7.60	...	7.60	10.55[2]	14.10	7.25	7.35	9.40
Washington	6.71	7.65	8.35	....	7.51	...	7.37	8.43	....	7.49	7.36	8.49

*Prices do not include gage extras; †prices include gage and coating extras, except Birmingham (coating extra excluded) and Los Angeles (gage extras excluded); ‡includes 35-cent special bar quality extra; §as rolled; **¼-in. and heavier; ††as annealed. ‡‡City delivery charge is 10 cents. Base quantities, 2000 to 9999 lb except as noted: Cold-rolled strip and cold-finished bars, 2000 lb and over, except in Seattle where base is 2000 to 9999 lb; stainless sheets, 8000 lb except in New York and Boston where base is 10,000 lb. [2]—500 to 9999 lb; [4]—4000 lb and over; [5]—1000 to 1999 lb; [6]—1600 lb and over; [7]—1500 lb to 3999; [8]—under ½ in.; [9]—f.o.b. local delivery in lots of 10,000 lb and over.

Warehouses Reluctant To Boost Prices

They doubt that business conditions will permit them to pass along all of mill price increases. There already had been price weakness at distributor level

Cleveland — Warehouse operators are expected to advance their prices to whatever extent is necessary to maintain their usual markup over mill quotations. In view of the sharp competition in the market, however, there is considerable speculation as to the effectiveness of a price increase at this time.

While the distributors may go through the motion of raising their published quotations, observers think such action will be little more than a gesture since, unless stronger demand develops than has been entertained recently, they will have difficulty making higher prices stick.

Fourth of July observance cut manufacturing operations sharply in this area, being reflected in a decided sag in demand for warehouse steel. Practically all plants in the district closed down for the 3-day weekend, except for maintenance.

July warehouse volume will be further reduced by widespread shutdowns for mass vacations. Prior to the holiday some 130 Cleveland area employers announced plans for vacation shutdowns to co-incide with the Fourth. Steel consumption will be curtailed on this account through most of the month.

Pittsburgh—It's doubtful planned mill price increases of about 2.5 per cent will be reflected in similar price increases by warehouses, according to distributors here. They believe price weakness in such products as sheets and strip will make it necessary for them to absorb part or all of their extra steel costs. Prices of such basically-firm products as structural shapes may go up. The expected July sales dip is beginning, several distributors report, as local plants close for vacation.

Boston—Confronted with slow demand, a highly competitive market, and weak prices, the warehouses in

STEEL IMPORT PRICES

(Base, per 100 lb, landed, duty paid)

	North Atlantic	South Atlantic	Gulf Coast	West Coast*
Deformed Bars, Intermediate, ASTM-A-305	$4.75	$4.75	$4.70	$5.03
Bar Size Angles	4.50	4.50	4.40	4.73
Structural Angles	4.50	4.50	4.40	4.73
I-Beams	4.50	4.50	4.40	4.73
Wide Flange Beams	4.80	4.80	4.80	5.08
Sheet and Plate, 10 gage, 11 gage, 5' x 10'	5.50	5.50	5.45	5.78
Furring Channels, C.R., 1000 ft, ¾ x 0.30 lb per ft	25.50	25.70	25.50	26.34
Barbed Wire	6.75	6.75	6.75	7.08
Merchant Bars	6.75	4.75	4.70	5.03
Hot-Rolled Bands	4.90	4.90	4.85	5.18
Wire Rods, Thomas Commercial No. 5	4.77	4.84	4.82	5.09
Wire Rods, O-H, Cold Heading Quality No. 5	5.23	5.30	5.28	5.55
Bright Common Wire Nails, 8d	6.85	6.95	6.90	7.15

*Not including $2.20 per net ton customarily charged in most West Coast ports for wharfage and handling.

Size O.D.	Wgt/Foot/Lb	Gulf Port	West Coast	Vancouver
Seamless A.P.I. Casing, Grade J-55:				
5½ in.	15.5	$1.47/ft	$1.51/ft	$1.32/ft
7 in.	23	2.10/ft	2.17/ft	1.90/ft
Seamless N-80 Casing:				
5½ in.	17	1.94/ft	2.00/ft	1.75/ft
7 in.	23	2.50/ft	2.70/ft	2.36/ft
Seamless J-55 Tubing:				
2⅜ in.	4.7	0.60/ft	0.63/ft	0.55/ft
2⅞ in.	6.5	0.80/ft	0.83/ft	0.73/ft

Sources of shipment: Western continental European (Schuman Plan) countries.

this area are reluctantly following the mill price increases. Some are skeptical about higher prices holding.

Buying is off, mostly small tonnages below base quantities. Slower moving off-size stock is not likely to sell at higher prices. This class of tonnage moved slowly at former price concessions. One result will be further restriction in warehouse orders with mills until the price structure at the distributor level is more stabilized.

New York—Warehouse volume, as expected, is off this month. Prices are soft on some products, notably hot-rolled in off sizes and slow moving grades. Steel in this category is hard to move. Slack in alloys is more pronounced than in carbon steel. Buying for aircraft is slower. Demand for shapes and plates is subnormal with fabricating operations off. Warehouse tonnage placed with mills for shipment over the next two months is the smallest in years.

Los Angeles—With July warehouse activity steady at the June level, warehousemen anticipate little change in third quarter. Deliveries are good, and distributors are well-stocked in all products.

Philadelphia—Warehouse business is expected to pick up this week following the severe lag of the past two weeks because of the Fourth of July holiday and mass vacations at a number of steel consuming plants. Most distributors anticipate a rather dull month in July, however, and also a lag throughout August.

San Francisco—Steel distributors anticipate a decline in business this month as the vacation season hits peak, but they are confident a substantial pickup in buying will be experienced in August.

Seattle — Warehouse order volume is not satisfactory. Business has been less than expected the last three months. The current lumber strike is adversely affecting sales while a threatened strike of shipyard workers also curtails demand.

Prices are unchanged here, but in Portland, Oreg., territory, published price schedules have been virtually thrown out the window, resulting in a confused market situation.

Cincinnati—Settlement of the steel wage negotiations without a strike will result in a healthier business situation, in the opinion of local warehouse operators. They would have paid heavily had they been faced with a heavy volume of strike-scare buying. Such a buying movement, they say, would have been followed by a severe slump. As it is, business will continue normally.

Flat-Rolled Steel Prices Are Advanced

Hot-rolled sheets raised $2.50 per ton and cold-rolled $3.50. Quotations on other grades also increased as leading makers adjust lists to reflect higher labor costs

Sheet and Strip Prices, Page 174 & 175

Philadelphia — Sheet business reflects seasonal dullness, with various consumer plants down for mass vacations. Such suspensions will likely be noted in one degree or another throughout the remainder of this month and next. Prices are higher on the average.

Bethlehem has advanced prices on hot-rolled carbon sheets $2.50 per ton, and cold-rolled and galvanized $3.50 a ton. Hot-rolled strip has been increased $2.50. Alan Wood increased hot sheets and hot strip $2.50. This producer also advanced hot-rolled high-strength sheets and high-strength strip $4.

Boston—Round nine in the wage-price increase race opens under new rules. Earlier price advances found consumers short of steel, mills alloting tonnage to meet heavy metal-working shop backlogs, with cost secondary to supply.

None of these factors are now prevalent. Mills need orders, consumers are operating under competitive conditions and cost of fabricated goods is a paramount consideration. Pressure against higher steel costs will be heavier, especially where doubt exists as to the ability of fabricators to pass on the increases.

For New Skyscraper

These 10-ton columns will be the first to be erected in the Equitable Life building, San Francisco. They were fabricated at the Maywood, Calif., plant of U. S. Steel Corp.'s Consolidated Western Steel Division

Sheet and strip users will go through July-August with minimum buying for production requirements only as expected, but higher costs will intensify this policy.

Pittsburgh—Strip steel sales are becoming more stabilized following a period of unsteadiness. Sheet orders may be more affected by July vacations than had been previously estimated. Several prime consumers filled their July requirements last month. Despite weakness in sales, sheet prices are being raised $2.50 to $3.50 a ton, to reflect the recent wage advance granted the steelworkers by producers.

Cleveland—Sheet mills do not anticipate much in the way of new buying this month with manufacturing plant shutdowns fairly general in this district. Possibly toward the end of the month consumers will begin to show interest in their late-summer and early fall requirements. Ordering for July shipment was restricted, reflecting the usual seasonal slackening. August volume should be larger, followed by a noticeable jump in demand for September delivery. What effect the higher prices will have on demand is a matter for speculation.

Cincinnati—The local district sheetmaker reportedly is improving the housing on its strip mill to permit rolling of wider sheets. This, along with mass vacation for employees, resulted in complete shutdown of the plant. A second large mill in the area continues sheet production at top speed.

Chicago—In this area, galvanized sheets maintain their position as tightest in supply of the flat-rolled products. One producer is virtually sold out through September. Early easing isn't anticipated since the Agriculture Department has just awarded $20 million worth of contracts to nine manufacturers for additional grain storage bins with capacity for storing 100 million bushels.

Los Angeles—Producers report a sizable drop in cold-strip demand. Sellers attribute the slump to increased availability of eastern cold-rolled sheets. Most western cold-strip customers are basically cold-rolled sheet users who purchased cold-strip when the eastern sheet market was tight.

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CLEVELAND, OHIO
DETROIT, MICH.
LOS ANGELES, CALIF.
TORONTO, CANADA
MONTREAL, CANADA

Tool Steel . . .

Tool Steel Prices, Page 178

New York—Shipments of high speed and tool steel (excluding hollow drill steel) declined in May, reports the American Iron & Steel Institute. Shipments in the month amounted to 6300 net tons, comparing with 7297 tons in April and with 10,863 tons in May of last year.

Cumulative shipments to the end of May this year totaled 37,599 net tons. This was down sharply from the 52,985 tons shipped in the like period of 1953.

Steel Bars . . .

Bar Prices, Page 174

Cleveland—Slow demand for merchant bars is anticipated by sellers in this area over the next couple weeks or so. Mass vacations is cutting current district consumption sharply. More than 130 manufacturing plants in the immediate Cleveland area, prior to the holiday, announced plans for general vacations co-inciding with Fourth of July week.

Some of the plants continue to take in steel over the vacation period but many asked shipments be held up until just before the vacation suspension ends.

Effective July 12, Republic Steel Corp. extended delivered pricing to hot-rolled alloy and cold-finished alloy bars. Issuance of delivered base price sheets on these products completes conversion of substantially all of Republic's bar mill items to its new delivered price method.

Delivered base prices were set up in the new schedule for hot-rolled alloy bars as follows: Buffalo, N. Y., $4.905; Canton and Massillon, O., $4.915; Chicago, $4.945. Delivered base prices on cold-finished alloy bars are: Beaver Falls, Pa., $6.385; Massillon, O., $6.365; Gary, Ind., $6.395; Hartford, Conn., $6.775.

Boston—While bar users have orders in for August on cold-finished, September in some cases, July will be a blank with many as far as shipments are concerned. There has been practically no buying in anticipation of price increases. Mill stock lists are substantial on numerous sizes of cold-rolled used in this area, 2-inch and under. Demand for alloys is slow. Where consumers have orders in on 30 to 45 day basis, releases are for production requirements only with little or no tonnage for inventory.

Philadelphia — Hot-rolled carbon

Leave your fabrication problems behind

You can go on your vacation a carefree man, when your "fab" order is in Levinson's hands. We'll look after every detail and make sure your order is delivered *as specified* and *on time.* You can place your full confidence in Levinson's top quality design, fabrication and erection.

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HEAVY-DUTY Air-Cooled ENGINES

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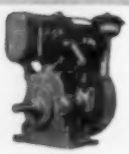
3 to 6 hp.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In the design, manufacture, and ultimate use-purchase of mechanized field and industrial equipment . . . Wisconsin Heavy-Duty Air-Cooled Engines are specified as Original Equipment Power Components to a greater extent than any other make of engine, within a 3 to 36 hp. range.

This dominant preference must necessarily be based on actual *performance records* of users . . . because Wisconsin Engines are not sold on a "price" basis. These engines have the inherent Lugging Power that *stays with the job,* eliminating "stop-and-go" delays, saving manpower and manhours . . . and delivering "Most H. P. Hours" of on-the-job service, with minimum servicing.

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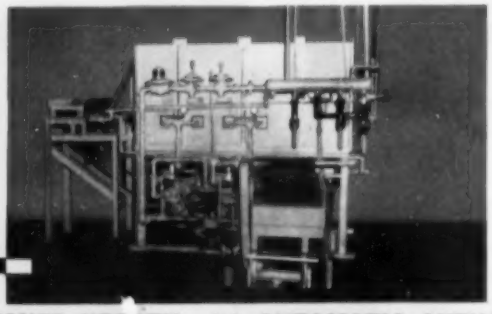

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Complete Line of Electric and Fuel-Fired Furnaces To Meet Every Industrial Need

Atmosphere Generators • Ammonia Dissociators • Gas Conditioning Equipment

bar demand lags. Seasonal influences and a fairly good consumer inventory situation rather than higher prices, appear mainly responsible.

Pittsburgh — Long-term trend in bar sales is upward, but increases aren't likely before September. A midsummer snag is developing now, due to decreased operations at fabricating plants. This dullness may continue through August.

Tin Plate . . .

Tin Plate Prices, Page 176

Chicago—Demand for tin plate is holding well despite the fact this was the sole product which figured to any extent in hedge buying by consumers against threat of a steel strike. Inventories thus accumulated apparently are not softening demand now that uninterrupted steelmaking is assured. One tin plate producer in this district expects to operate at near capacity through third quarter.

Pittsburgh—Production at tin mills continues near capacity. Some of the activity is due to late July and August requirements ordered at a time when a steel strike appeared possible. With growing inventories, canmakers are decreasing their orders for August.

Although third quarter sales will trail those of second quarter, the decline will be gradual, producers say.

Tubular Goods . . .

Tubular Goods Prices, Page 177

Chicago—A pipe and tubemaker in this district is entering more orders now than a year ago, but the orders are smaller. For buttweld pipe, which is distributed largely by jobbers, July shipments from the mill will exceed June business. Mechanical tubing definitely is off, reflecting the lower activity in such lines as farm equipment and road building machinery.

Philadelphia—Wheatland Tube Co. is starting production at its new mill in Delair, N. J. Plant will produce approximately 9000 tons of electric welded steel tubing, 12 to 22 gage, working in conjunction with the company's plant at Wheatland, Pa., where the company has facilities for producing 121,470 tons of buttweld pipe and 8300 tons of electric weld tubing. Facilities also are maintained there for hot dip galvanizing.

Edward F. Maneely, president, points to sharp demand for electric weld tubing in the television antenna, furniture, garden implement, and accessory fields. The new plant is highly mechanized.

Reinforcing Bars . . .

Reinforcing Bar Prices, Page 174

New York—Small nonintegrated producers of reinforcing bars, light rails and light angles contemplate advancing prices once they have completed their own labor adjustments and have had an opportunity of gaging competition. This is likely to be particularly true in reinforcing steel in which competition has been less severe than in the other items over recent months.

Chicago—Building construction in this area continues unabated and prospects are that an active fall volume can be expected. Reinforcing bar and accessory suppliers are hard pressed to keep up with estimating of jobs and filing of bids. The intense competition among contractors for industrial and commercial work is conducive to a certain amount of price shading generally in this market.

Seattle — Rolling mill operations were promptly resumed after the holiday curtailment. All plants in this area have substantial order backlogs. For the Seattle postoffice terminal 2000 tons of reinforcing are pending. Mills report a fair volume of orders running to less than 100 tons each.

Structural Shapes . . .

Structural Shape Prices, Page 174

Boston—Firmer prices on fabricated structural steel in place are reflected in unit bids for the 7880-ton, Portsmouth-Tiverton, R. I. bridge. On silicon steel erected, 25.25c per pound was low. Other low estimates: simple span plate girders, 20.60c; continuous beam span stringers, 16.35c; simple beam span stringers, 15.30c; plate girder floor beams, 20.20c; continuous span plate girders, 22.30c and stringers, 15.50c.

More bridge tonnage is being estimated. Guard rail for the Portland-Augusta extension, Maine turnpike, will be partly light steel beam construction. First contract closes July 16, requiring 141,537 linear feet.

Plain structural material, including wide flange, is in ample supply, although a Pittsburgh district producer is not equalizing on the delivered price.

New York—Higher shape prices should tend to stiffen the fabricated steel market. But some fabricators question whether they will be able to pass along the full increase in prices, as well as increases in their own labor costs (which will be the case at least in many shops), to the builder. Competition has been sharp and it may be difficult, at least for the time being, to add much. However, even before the steel contract settlement, fabricated steel prices were firming a little and now with added costs there may be further stiffening.

Philadelphia—Structural steel demand is spotty, with bridge work continuing to dominate activity.

Bethlehem has advanced shapes, both standard and wide flange, from 4.15c to 4.30c, Bethlehem, Pa., a jump of $3 a ton.

Pittsburgh—Increase in the number of state bridge projects creates a growing market for structural steel. Railroad bridges and highway projects are proceding at a brisk rate. Industrial construction is slow. Light weight beams continue to be in somewhat tight supply, causing unbalanced inventories in some cases.

Seattle—Several fair-sized awards of structurals are immediately pending, including 2300 tons for the hangar at Moses Lake, Wash., and 800 tons for an addition to the Scott Paper Co.'s plant, Everett, Wash.

Iron Ore . . .

Iron Ore Prices, Page 180

New York—*Ore Chief*, the 60,000-deadweight ton vessel, is on her way from Japan to enter service between the United States and Venezuela carrying ore for United States Steel Corp., Pittsburgh. She is the largest cargo vessel in the world and her 794-foot length is exceeded by only four passenger liners. She is scheduled to take on her first load of Venezuelan ore Aug. 8 for U. S. Steel's furnaces in the Birmingham district.

The *Ore Chief's* 116-ft beam, 56-ft depth, and 36-ft draft make her too large for the Panama canal and force her to use only the deepest water ports. She will use Mobile and Baltimore ports and eventually will deliver ore to U. S. Steel's Fairless Works on the Delaware river when the channel there has been deepened.

The *Ore Chief* is owned by Universe Tankships Inc., a Liberian affiliate of National Bulk Carriers, New York.

Cleveland—Shipments of iron ore from the head of the lakes in June totaled 10,608,262 gross tons, reports the Lake Superior Iron Ore Association. The tonnage was the largest moved in any month to date in the

(*Please turn to page* 190)

33 years ago they told me:

"YOU HAVE LESS THAN A YEAR TO LIVE!"

"MUST HAVE BEEN back in 1919 or '20. Hopeless case of diabetes. No known cure . . .

"BUT HERE I AM. They found a treatment—insulin—in time. Today, *nobody* has to die of diabetes.

"CANCER, I know, is a tougher problem. But the laboratories can lick that one, too—with our support. Already, they're curing people who would have been done for a few years ago. Last year—thanks to $5,000,000 allocated by the American Cancer Society from our contributions—they found out a lot more . . . though there's still a long way to go.

"THEY NEED MONEY, though. $5,000,000 is still less than 4 cents per American *per year*. Not enough. Not enough to find the answer *fast* enough—230,000 Americans are going to die of cancer *this year*, they say.

"I'M NOT RICH, but I gave 'em $50 last year—hope to do better this time. After all, where would *I* be if the laboratories working on diabetes, that time, hadn't been given enough support—?"

Cancer
MAN'S CRUELEST ENEMY
Strike back—Give

AMERICAN CANCER SOCIETY
GENTLEMEN:
☐ Please send me free information on cancer.
☐ Enclosed is my contribution of $..... to the cancer crusade.
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Simply address the envelope: CANCER c/o Postmaster, Name of Your Town

CURRENT FERROALLOY QUOTATIONS

Prices as reported to STEEL

MANGANESE ALLOYS

Spiegeleisen: (19-21% Mn, 1-3% Si). Carlot per gross ton $86, Palmerton, Pa.; $87 Clairton and Duquesne, Pa.
(16 to 19% Mn) $84 per ton, Palmerton, Pa.; $85 per ton, Clairton and Duquesne, Pa.

Standard Ferromanganese: (Mn 74-76%, C 7% approx.) Base price per net ton $200, Clairton, Duquesne, Johnstown and Sheridan, Pa.; Alloy, W. Va.; Ashtabula, Marietta, O.; Sheffield, Ala.; and Portland, Oreg.; add or subtract $2.00 for each 1% or fraction thereof of contained manganese over 76% or under 74%, respectively.

(Mn 79-81%) Lump $208 per net ton, f.o.b. Anaconda or Great Falls, Mont. Add $2.60 for each 1% above 81%; subtract $2.60 for each 1% below 76%, fractions in proportion to nearest 0.1%.

Low-Carbon Ferromanganese, Regular Grade: (Mn 85-90%). Carload, lump, bulk, max. 0.07% C, 27.95c per lb of contained Mn, carload packed 28.7c, ton lots 29.8c, less ton 31.0c. Delivered. Deduct 0.5c for max 0.15% C grade from above prices, 1c for max. 0.30% C, 1.5c for max 0.50% C, and 4.5c for max 75% C—max 7% Si. **Special Grade:** (Mn 90% min, C 0.07% max, P 0.06% max). Add 2.05c to the above prices. Spot, add 0.25c.

Medium-Carbon Ferromanganese: (Mn 80-85% C 1.5% max). Carload, lump, bulk 21.3c per lb of contained Mn, carload packed 22.1c, ton lot 23.2c, less ton 24.4c. Delivered. Spot, add 0.25c.

Manganese metal, 2" x D (Mn 95.5% min, Fe 2% max, Si 1% max, C 0.2% max): Carload, lump, bulk, 36.2c per lb of metal; packed, 36.95c; ton lot 38.45c; less ton lots 40.45c. Delivered. Spot, add 2c.

Electromanganese: Min. carloads, 30c; 2000 lb to min carloads, 35c; 250 lb to 1999 lb, 34c; less than 250 lb, 37c. Premium for hydrogen-removed metal, 0.75c per lb, f.o.b. cars, Knoxville, Tenn. Freight allowed to St. Louis or to any point east of Mississippi.

Silicomanganese: (Mn 65-85%). Contract, lump, bulk, 1.50% C grade, 18-20% Si, 11.00c per lb of alloy, carload packed, 11.75c, ton lots 12.65c, less ton 13.65c. Freight allowed. For 2% C grade, Si 15-17%, deduct 0.2c from above prices. For 3% C grade, Si 12-14.5%, deduct 0.4c from above prices. Spot, add 0.25c.

TITANIUM ALLOYS

Ferrotitanium, Low-Carbon: (Ti 20-25%, Al 3.5% max, Si 4% max, C 0.10% max). Contract, ton lots 2" x D, $1.50 per lb of contained Ti; less ton $1.55. (Ti 38-43%, Al 8% max, Si 4% max, C 0.10% max). Ton lots $1.35, less ton $1.37, f.o.b. Niagara Falls, N. Y., freight allowed to St. Louis. Spot, add 5c.

Ferrotitanium, High-Carbon: (Ti 15-18%, C 6-8%). Contract $177 per net ton, f.o.b. Niagara Falls, N. Y., freight allowed to destinations east of Mississippi river and north of Baltimore and St. Louis.

Ferrotitanium, Medium-Carbon: (Ti 17-21%, C 2-4.5%). Contract $195 per ton, f.o.b. Niagara Falls, N. Y., freight not exceeding St. Louis rate allowed.

CHROMIUM ALLOYS

High-Carbon Ferrochrome: Contract, C.l., lump, bulk 24.75c per lb of contained Cr; c.l. packed 25.65c, ton lot 26.80c, less ton 28.20c. Delivered. Spot, add 0.25c.

Low-Carbon Ferrochrome: (Cr 67-72%). Contract, carload, lump, bulk, max. 0.025% C (Simplex) 34.50c per lb contained Cr, 0.03% C 36.50c, 0.04% C 35.50c, 0.06% C 34.50c, 0.10% C 34.00c, 0.15% C 33.75c, 0.20% C 33.50c, 0.50% C 33.25c, 1% C 33.00c, 1.50% C 32.45c, 2% C 32.75c. Carload packed add 1.1c, ton lot 2.2c, less ton add 3.9c. Delivered. Spot, add 0.25c.

Foundry Ferrochrome, High-Carbon: (Cr 62-66%, C 5-7%). Contract, c.l. 8 M x D, bulk, 26.25c per lb contained Cr. Packed, c.l. 27.15c, ton 28.50c, less ton 30.25c. Delivered. Spot, add 0.25c.

Foundry Ferrochrome, Low-Carbon: (Cr 50-54%, Si 28-32%, C 1.25% max). Contract, carload, packed, 8 M x D, 18.35c per lb of alloy; ton lot 19.2c; less ton lot, 20.4c, delivered; spot, add 0.25c.

Low-Carbon Ferrochrome Silicon: (Cr 34-41%, Si 42-49%, C 0.05% max). Contract, carload, lump, 4" x down and 2" x down, bulk, 24.75c per lb of contained chromium plus 10.8c per pound of contained silicon; 1" x down, bulk 25.25c per pound of contained chromium plus 11c per pound of contained silicon. F.o.b. plant; freight allowed to destination.

Chromium Metal: (Min 97% Cr and 1% Fe) contract, 1" x D; packed, max 0.50%, carload $1.12, ton lots $1.14; less ton $1.16. Delivered. Spot, add 5c. Prices on 0.10 per cent carbon grade, add 4c to above prices.

VANADIUM ALLOYS

Ferrovanadium: Open-hearth Grade (V 35-55%, Si 5-12% max, C 3-3.5% max). Contract, any quantity, $3.00 per lb of contained V. Delivered. Spot, add 10c. **Crucible-Special Grades** (V 35-55%, Si 2-3.5% max, C 0.5-1% max), $3.10. **Primos and High Speed Grades** (V 35-55%, Si 1.50% max, C 0.20% max) $3.20.

Grainal: Vanadium Grainal No. 1, $1 per lb; No. 6, 68c; No. 79, 50c, freight allowed.

Vanadium Oxide: Contract, less carload lots $1.28 per lb contained V_2O_5, freight allowed. Spot, add 5c.

SILICON ALLOYS

25-30% Ferrosilicon: Contract, carload, lump, bulk, 20.0c per lb of contained Si, packed 21.40c; ton lot 22.50c f.o.b. Niagara Falls, freight not exceeding St. Louis rate allowed.

50% Ferrosilicon: Contract, carload, lump, bulk, 10.80c per lb of contained Si, carload packed 12.40c, ton lot 13.85c, less ton 15.5c. Delivered. Spot, add 0.45c.

Low-Aluminum 50% Ferrosilicon: (Al 0.40% max). Add 1.7c to 50% ferrosilicon prices.

65% Ferrosilicon: Contract, carload, lump, bulk, 12.2c per pound contained silicon; carload packed 13.55c; ton lots, 14.75c; less ton, 16.1c, delivered. Spot, add 0.35c.

75% Ferrosilicon: Contract, carload, lump, bulk, 13.8c per lb of contained Si, carload packed 15.1c, ton lot 16.25c, less ton 17.5c. Delivered. Spot, add 0.8c.

90-95% Ferrosilicon: Contract, carload, lump, bulk, 17.0c per lb of contained Si, carload packed 18.2c, ton lot 19.15c, less ton 20.2c. Delivered. Spot, add 0.25c.

Silicon Metal: (Mn 97% Si and 1% max Fe) C.l. lump, bulk, regular 18.5c per lb of Si, c.l. packed 19.7c, ton lot 20.6c, less ton 21.6c. Add 0.5c for max. 0.10% calcium grade. Deduct 0.5c for max 2% Fe grade analyzing min 96% Si. Spot, add 0.25c.

Alsifer: (Approx. 20% Al, 40% Si, 40% Fe) Contract, basis f.o.b. Niagara Falls, N. Y., lump, carload, bulk, 9.25c per lb of alloy, ton lots packed 10.15c, 200 to 1999 lb 10.50c, smaller lots 11c.

ZIRCONIUM ALLOYS

12-15% Zirconium Alloy: (Zr 12-15%, Si 30-43%, Fe 40-45%, C 0.20% max). Contract, c.l. lump, bulk 8.0c per lb of alloy, c.l. packed 8.75c, ton lot 9.5c, less ton 10.35c. Delivered. Spot, add 0.25c.

35-40% Zirconium Alloy: (Zr 35-40%, Si 47-52%, Fe 8-12%, C 0.50% max). Contract, carload, lump, packed 20.25c per lb of alloy, ton lot 21c, less ton 22.25c. Freight allowed. Spot, add 0.25c.

BORON ALLOYS

Ferroboron: (B 17.50% min, Si 1.50% max, Al 0.50% max, C 0.50% max). Contract, 100 lb or more 1" x D, $1.20 per lb of alloy. Less than 100 lb $1.30. Delivered, spot add 5c. F.o.b. Washington, Pa., prices, 100 lb and over are as follows: Grade A (10-14% B) 85c per pound; Grade B (14-18% B) $1.20; Grade C (19% min M) $1.50.

Boresil: (3 to 4% B, 40 to 45% Si), $5.25 per lb contained B, delivered to destination.

Bortam: (B 1.5-1.9%). Ton lots, 45c per lb; smaller lots, 50c per lb.

Carbortam: (B 1 to 2%) Contract, lump, carloads 9.50c per lb, f.o.b. Suspension Bridge, N. Y., freight allowed same as high-carbon ferrotitanium.

CALCIUM ALLOYS

Calcium-Manganese-Silicon: (Ca 16-20%, Mn 14-18% and Si 53-59%). Contract, carload, lump bulk 20.0c per lb of alloy, carload packed 20.8c, ton lot 22.3c, less ton 23.3c. Delivered. Spot, add 0.25c.

Calcium-Silicon: (Ca 30-33%, Si 60-65%, Fe 1.50-3%). Contract, carload, lump, bulk 19.0c per lb of alloy, carload packed 20.2c, ton lot 22.1c, less ton 23.6c. Deld. Spot, add 0.25c.

BRIQUETTED ALLOYS

Chromium Briquets: (Weighing approx. 3¾ lb each and containing exactly 2 lb of Cr). Contract, carload, bulk, 16.25c per lb of briquet, carload packed 16.95c, ton 17.75c, less ton 18.65c. Deld. Add 0.25c for notching. Spot, add 0.25c.

Ferromanganese Briquets: (Weighing approx. 3 lb and containing exactly 2 lb of Mn). Contract, carload, bulk 12.45c per lb of briquet, c.l. packaged 13.25c, ton lot 14.05, less ton 14.95c. Delivered. Add 0.25c for notching. Spot, add 0.25c.

Silicomanganese Briquets: (Weighing approx. 3½ lb and containing exactly 2 lb of Mn and approx. ¼ lb of Si). Contract, c.l. bulk 12.45c, per lb of briquet, c.l. packaged 13.45c, ton lot 14.25c, less ton 15.15c. Delivered. Add 0.25c for notching. Spot, add 0.25c.

Silicon Briquets: (Large size—weighing approx. 5 lb and containing exactly 2 lb of Si). Contract, carload, bulk 6.3c per lb of briquet. Packed c.l. 7.10c, ton lot 7.9c, less ton 8.8c. Delivered. Spot, add 0.25c.
(Small size—Weighing approx. 2½ lb and containing exactly 1 lb of Si). Carload, bulk 6.45c. Packed c.l. 7.25c, ton lot 8.05c, less ton 8.95c. Delivered. Add 0.25c for notching, small size only. Spot, add 0.25c.

Molybdic-Oxide Briquets: (Containing 2½ lb of Mo each) $1.14 per pound of Mo contained, f.o.b. Langeloth, Pa.

TUNGSTEN ALLOYS

Ferrotungsten: (70-80%), 5000 lb W or more $3.80 per lb of contained W; 2000 lb W to 5000 lb W, $3.90; less than 2000 lb W, $4.02, f.o.b. Niagara Falls, N. Y.

OTHER FERROALLOYS

Ferrocolumbium: (Cb 56-60%, Si 8% max, C 0.4% max). Contract, ton lot, 2" x D, $9.50 per lb of contained Cb, less ton $9.55. Delivered. Spot, add 10c.

Ferrotantalum—Columbium: (Cb 40% approx., Ta 20% approx., and Cb and Ta 60% min, C 0.30% max) ton lots, 2" x D, $4.75 per lb of contained Cb plus Ta, deld.; less ton lots $4.80.

Silicaz Alloy: (Si 35-40%, Ca 9-11%, Al 6-8%, Zr 3-5%, Ti 9-11%, B 0.55-0.75%). Carload packed 1" x D, 45c per lb of alloy, ton lot 47c, less ton 49c. Delivered.

SMZ Alloy: (Si 60-65%, Mn 5-7%, Zr 5-7%, Fe 20% approx). Contract, carload, packed, ½" x 12 M, 17.8c per lb of alloy, ton lots 18.25c, less ton 19.5c. Deld. Spot, add 0.25c.

Graphidox No. 4: (Si 48-52%, Ca 5-7%, Ti 9-11%). C.l. packed, 17.50c per lb of alloy; ton lots 18.50c; less ton lots 20c, f.o.b. Niagara Falls, N. Y.; freight allowed to St. Louis.

V-S Foundry Alloy: (Cr 38-42%, Si 17-19%, Mn 8-11%). C.l. packed 16.6 per lb of alloy; ton lots 18.10c; less ton lots 19.35c, f.o.b. Niagara Falls; freight allowed to St. Louis.

Simanal: (Approx. 20% each Si, Mn, Al; bal. Fe). Lump, carload, bulk 15.50c. Packed c.l. 16.50c, 2000 lb to c.l. 16.75c, less than 2000 lb 17.25c per lb of alloy. Delivered.

Ferrophosphorus: (23-25% based on 24% P content with unitage of $4 for each 1% of P above or below the base); carloads, f.o.b. sellers' works, Mt. Pleasant, Sigio, Tenn., $90 per gross ton.

Ferromolybdenum: (55-75%). Per lb contained Mo, f.o.b. Langeloth, $1.32 in all sizes except powdered which is $1.41; Washington, Pa., furnace, any quantity $1.32.

Technical Molybdic-Oxide: Per lb contained Mo, f.o.b. Langeloth, Pa., $1.14 in cans; in bags, $1.13, f.o.b. Langeloth, Pa.; Washington, Pa., $1.13.

"Since being rammed with Permanente 165, this open hearth bottom produced 18,130 tons in a 30-day period—500 more tons than this furnace ever has produced." How? Less down-time!

This report from a leading steel mill is only one of the many proving how the superiority of Permanente 165 ramming mix results in increased production and lowered costs.

Permanente 165 is a high MgO periclase material of high refractoriness that is self-bonding by crystalline growth. Impurities are minimized because no sintering agents, no low melting fluxes are present.

Its high density and absence of shrinkage cracks and connected voids give a greater resistance to the chemical attack of iron oxide and basic open hearth slag.

Upon request, your Kaiser refractory engineer will promptly offer you research, design and installation service to help you obtain more steel tonnage, and improved quality—at lower bottom cost per ton.

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Fifth Edition, 440 pages, Illustrated, **POSTPAID**

This book brings together the combined knowledge and experience of 31 outstanding authorities and takes one step by step through steelmaking. Representing years and years of constant work and study, "ABC" is the result of actual first-hand experience. It is written in simple, non-technical language, and hundreds of photographs of operations and equipment are included. **The Penton Publishing Co., Book Department, 1213 W. 3rd. St., Cleveland 13, O.**

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ORES–COKE–REFRACTORIES

Prices as reported to STEEL; changes shown in italics.

ORES

Lake Superior Iron Ore

(Prices effective July 1, 1953, and thereafter; gross ton, 51.50% iron natural, rail of vessel, lower lake ports.)

Old range bessemer	$10.30
Old range nonbessemer	10.15
Mesabi bessemer	10.05
Mesabi nonbessemer	9.90
Open-hearth lump	11.15
High phosphorus	9.90

The foregoing prices are based on upper lake rail freight rates, lake vessel freight rates, handling and unloading charges, and taxes thereon which were in effect on June 24, 1953, and increases or decreases after such date are for buyer's account.

Eastern Local Iron Ore

Cents per unit deld. E. Pa.

Foundry and basic 56-62% concentrates contract	17.00-18.00

Foreign Iron Ore

Cents per unit, c.i.f. Atlantic ports

Swedish basic, 60 to 68%	20.00
North African hematite (spot)	20.00-22.00
Brazilian iron ore, 68-69% (spot)	25.00

Tungsten Ore

Net ton unit, before duty

Foreign Wolframite, good commercial quality	$23.00
Domestic scheelite, mine	63.00

Manganese Ore

Mn 48%, nearby, $1.02-$1.05 per long ton unit c.i.f. U. S. ports, duty for buyer's account; 46-47%, $0.95-$0.97.

Chrome Ore

Gross ton, f.o.b. cars, New York, Philadelphia, Baltimore, Charleston, S. C., plus ocean freight differential for delivery to Portland, Oreg., or Tacoma, Wash.

Indian and African

48% 2.8:1	$40.00-$42.00
48% 3:1	44.00-46.00
48% no ratio	32.00-34.00

South African Transvaal

44% no ratio	$21.00-$22.00
48% no ratio	34.00

Domestic

(Rail nearest seller)

48% 3:1	$39.00

Molybdenum

Sulphide concentrate, per lb, Mo content mines, unpacked	$1.00

Antimony Ore

Per unit of Sb content, c.i.f. seaboard

50-60%	$2.40-$2.80
65% min.	$3.40-$3.50

Vanadium Ore

Cents per lb. V_2O_5 content, deld. mills

Domestic	31.00

REFRACTORIES

Fire Clay Brick

High-Heat Duty: Pueblo, Colo., $89; Ashland, Grahn, Hayward, Hitchins, Haldeman, Olive Hill, Ky., Athens, Troup, Tex., Beech Creek, Clearfield, Curwensville, Lock Haven, Lumber, Orviston, West Decatur, Pa., Bessemer, Ala., Farber, Mexico, St. Louis, Vandalia, Mo., Ironton, Oak Hill, Parral, Portsmouth, O., Ottawa, Ill., Stevens Pottery, Ga., Woodbridge, N. J., $109; Salina, Pa., $114; Niles, O., $120; Los Angeles, Pittsburg, Calif., $132.30.

Silica Brick

Standard: Alexandria, Claysburg, Mt. Union, Sproul, Pa., Ensley, Ala., Portsmouth, O., $115; Warren, O., Hays, Pa., $120; Niles, O., $120; E. Chicago, Ind., Joliet, Rockdale, Ill., $125; Cutler, Utah, $116.55; Los Angeles, $122.85.

Insulating Fire Brick

2300° *F:* Massillon, O., $178.50; Clearfield, Pa., $213; Augusta, Ga., Beaver Falls, Zelienople, Pa., Mexico, Mo., $206; Vandalia, Mo., $214.10; Portsmouth, O., $207.50; Bessemer, Ala., $212.80.

Ladle Brick

Dry Pressed: Bessemer, Ala., $64.60; Alsey, Ill., Chester, New Cumberland, W. Va., Freeport, Johnstown, Merrill Station, Pa., Wellsville, O., $77.50; Mexico, Mo., $73.50; Clearfield, Pa., Portsmouth, O., $83; Peria, Ark., $109; Los Angeles, $110.25; Pittsburg, Calif., $111.30.

Sleeves

Reesdale, Pa., $139.70; Johnstown, Pa., $140; Clearfield, Pa., $148.50; St. Louis, $151.80; Athens, Tex., $155.

Nozzles

Reesdale, Pa., $223.50; Johnstown, Pa., $229.20; Clearfield, Pa., $241.40; St. Louis, $247.10; Athens, Tex., $247.70.

Runners

Reesdale, Pa., $174; Johnstown, Pa., $177.80; Clearfield, Pa., $185.50; St. Louis, $187.30; Athens, Tex., $191.80.

High-Alumina Brick

50 *Per Cent:* Clearfield, Pa., St. Louis, Mexico, Mo., $179; Danville, Ill., $169.30.

60 *Per Cent:* St. Louis, Mexico, Vandalia, Mo., $223.00; Danville, Ill., $213.20.

70 *Per Cent:* St. Louis, Mexico, Vandalia, Mo., $225; Danville, Ill., $256; Clearfield, Pa., $252.

Dolomite

Domestic, dead-burned bulk; Billmeyer, Blue Bell, Williams, Plymouth Meeting, York, Pa., Millville, W. Va., Bettsville, Millersville, Martin, Nario, Gibsonburg, Woodville, O., $14.50; Thornton, McCook, Ill., $14.60; Dolly Siding, Bonne Terre, Mo., $13.65.

Magnesite

Domestic, deadburned bulk; Luning, Nev., $38.

METALLURGICAL COKE

Price per net ton

Beehive Ovens

Connellsville, furnace	$14.50-$15.00
Connellsville, foundry	16.50-17.00

Oven Foundry Coke

Kearney, N. J., ovens	$24.00
Everett, Mass., ovens	
New England, deld.	*26.05
Chicago, ovens	24.50
Chicago, deld.	26.00
Terre Haute, ovens	24.05
Milwaukee, ovens	25.25
Indianapolis, ovens	24.25
Chicago, deld.	2..12
Cincinnati, deld.	25.85
Painesville, O., ovens	25.50
Cleveland, deld.	27.43
Erie, Pa., ovens	25.00
Birmingham, ovens	22.65
Cincinnati, deld.	27.58
Buffalo, ovens	25.00
Buffalo, deld.	26.25
Lone Star, Tex., ovens	18.50
Philadelphia, ovens	23.00
Swedeland, Pa., ovens	23.00
St. Louis, ovens	
St. Louis, deld.	26.00
St. Paul, ovens	23.75
Portsmouth, O., ovens	24.00
Cincinnati, deld.	26.62
Detroit, ovens	25.50
Detroit, deld.	26.50
Pontiac, deld.	27.06
Saginaw, deld.	28.58

*Or within $4.55 freight zone from works.

COAL CHEMICALS

Spot, cents per gallon, ovens

Pure benzol	40.00
Toluol, one deg	32.00-35.00
Industrial xylol	32.00-35.00

Per ton, bulk, ovens

Sulphate of ammonia	$42-$45
Birmingham area	42.00†

†With port equalization against imports.

Cents per pound, producing point

Phenol 40 deg. (U.S.P.), tank cars	18.00
c.l. drums	19.00
l.c.l. drums	19.50

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Metallurgical grades, f.o.b. shipping point, in Ill., Ky., net tons, carloads, effective CaF_2 content 72.5%, $44; 70%, $42.50; 60%, $38. Imported, net ton, duty paid, metallurgical grade, $35-$36.

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2½	30	28.00
3	40	27.25
4	40	26.00
5½	40	25.75
6	60	23.25
7, 8, 9, 10	60	21.00
12, 14	72	20.50
16	72	20.00
17	60	20.50
18	72	20.50
20	72	20.00

CARBON

40	100	$8.95
40, 35, 30	110	8.95
30	84	9.10
24	96	8.90
24	72, 84	9.10
20	90	8.95
20	84	9.10
17	72	9.10
17	60	9.50
14	72	9.50
14, 12, 10	60	10.30
8	60	10.55

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Iron Ore . . .

(*Concluded from page* 185)

1954 shipping season. In June a year ago shipments amounted to 13,744,-894 gross tons.

Cumulative shipments to July 1 this year are reported at 22,084,520 tons, substantially under the 36,058,-371 tons shipped in the season to July 1, 1953.

Pig Iron . . .

Pig Iron Prices, Page 178

Chicago — Activity of gray iron foundries last week was at the lowest point of the year. It took a precipitate drop with many shops going down for vacations for varying periods, some as long as three weeks. This slackened demand for pig iron revived a blast furnace practice little used in recent years. At least one merchant stack banked over the 3-day holiday. Wisconsin Steel Works is banking a furnace for a longer period while it reduces steel producing activities in July and August for staggered vacations.

Boston—Pig iron buying is not likely to bulge to any extent before September. Many shops are down for vacations, some extending shutdowns longer than usual. Backlogs are lacking with most foundries and inventories of iron are down to a low point. A mild pickup in demand for castings this fall would quickly be reflected in an increase in demand for pig iron.

The district furnace has reduced production to the lowest point possible and still operate. Stockpile is substantial and includes some basic. Curtailed ingot operations hold down steelworks buying.

New York—Just how much, if any, higher labor costs will be reflected in the local pig iron market is difficult to say at this time. Consumer requirements continue light, with some foundries having a struggle to keep going. Also there are the foreign offerings along the eastern seaboard, running $10 and $12 a ton under the domestic market. Still further, there are some producers competing in this market, whose labor contracts will not expire for a while.

No advances have been announced by any of the eastern pig iron producers and opinion in some trade quarters is that no change will likely be made in immediate future along the eastern seaboard, principally because of foreign competition and continued dull demand from many of the leading consumers.

Los Angeles—Increasing casting requirements have pushed foundry activity to near-capacity levels. Melters' backlogs range from four to seven weeks.

Fasteners . . .

Bolt, Nut, Rivet Prices, Page 177

New York—Bolt and nut makers look for adjustments in prices on their products as a result of the wage increases now going on in the steel and metalworking industries. They do not anticipate a straight across-the-board advance, but rather selective increases. For instance, some structural sizes, ¾-inch bolts in particular, are believed due for a substantial increase.

According to one fastener manufacturer, most makers are "losing their shirts" on certain of these items even as things stand now. Business in fasteners has been sluggish so far this year, with competition sharp. However, with added increase in

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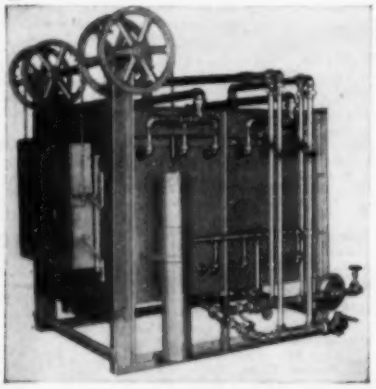

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costs assured, higher prices appear inevitable in some items.

In general, labor adjustments in the bolt and nut industry will likely follow fairly closely the basic steel pattern, certainly insofar as wage increases are concerned.

Sta-Rite Expands in Canada

Sta-Rite Products Inc., Delavan, Wis., manufacturer of electrically operated pumps, through its subsidiary, Sta-Rite (Canada) Ltd., leased property in Ajax, Ont. The Toronto area was chosen due to the concentration there of mail order houses and plumbing, hardware and appliance wholesalers which will absorb a major portion of the company's output.

STRUCTURAL SHAPES . . .

STRUCTURAL STEEL PLACED

285 tons, service building, Temple University, Philadelphia, to Bethlehem Steel Co., Bethlehem, Pa.

130 tons, Pennsylvania railroad bridge, Frankford creek, Philadelphia, to American Bridge Division, U. S. Steel Corp., Pittsburgh.

STRUCTURAL STEEL PENDING

7000 tons, Supreme Court building, Brooklyn, New York Department of Public Works, bids closed July 7.

3100 tons, bridge, Chicopee river, Chicopee, Mass.

2300 tons, viaduct 800 tons, and first underground section 1500 tons, central artery, Boston.

2200 tons, maintenance hangar and shops, Air Force base, Alexandria, La.; bids July 22, Corps of Engineers, Little Rock, Ark.

1600 tons, Bowery Savings Bank building, St. Nicholas Ave. and 145th St., New York, bids closed.

800 tons, paper mill addition, Scott Paper Co., Everett, Wash.; bids in.

700 tons, state bridge, Lehigh county, Pa., John H. Swanger, Lancaster, Pa., low on general contract.

500 tons, state turnpike bridge, Montgomery county, Pa.; bids July 21.

280 tons, two 2-span rolled beam bridges, Hartford-Springfield expressway, Hartford-Windsor, Conn.; bids July 12, Hartford, Conn.

250 tons, six-span girder bridge, Norwich, Conn., over New Haven railroad tracks; bids July 12, Hartford, Conn.

180 tons, security warehouse, State Department of Purchases & Supply, Pittsburgh; Pittsburgh Bridge & Iron Works, that city, low bidder.

103 tons, state bridge, Carbon county, Pa.; bids July 23.

100 tons, state highway bridge, Eastern river, Dresden, Me.; bids July 14. Augusta, Me.

100 tons, single span WF beam bridge, Fairfield river, Fairfield, Vt.; bids in, July 9.

100 tons or more, marquees and other items, Seattle terminal postoffice; general contract to Howard S. Wright & Co. Inc., Seattle.

Unstated, sluice gates and other appurtenances, Chandler power plant, Yakima, Wash., project; bids to Bureau of Reclamation, Denver, July 29.

REINFORCING BARS . . .

REINFORCING BARS PLACED

900 tons, bridge piers and drainage structures, Portland - Augusta extension, Maine turnpike, to Bancroft & Martin Rolling Mills Co., Portland, Me.; Nello L. Teer Co., Durham, N.C., general contractor; will also erect 3000 tons, fabricated structural steel for bridges.

645 tons, two grade separation underpasses, Soldiers' Field road, Brighton district, Boston, to Bethlehem Steel Co., Bethlehem, Pa.; Coleman Bros. Corp., Boston, general contractor.

400 tons, bridge piers and drainage structures, Portland-Augusta extension, Maine turnpike, to Truscon Steel Co., Boston; Consolidated Construction Co., North Attleboro, Mass., general contractor.

230 tons, two state bridges, expressway, Waterbury, Conn., to Bethlehem Steel Co., Bethlehem, Pa.; Mariani Construction Co., Inc., New Haven, general contractor.

100 tons, state highway bridge, Portsmouth-Newington, N. H., to Bancroft & Martin Rolling Mills Co., Portland, Me.; Landers & Griffin, Inc., Portsmouth, N. H., general contractor.

REINFORCING BARS PENDING

2000 tons or more, Seattle terminal postoffice; general contract to Howard S. Wright & Co. Inc., Seattle.

825 tons, including 600 tons, mat reinforcing, state highway and two bridges, Hartford-Windsor, Conn.; bids July 12, Hartford, Conn.

375 tons, piers and erection (only) eight bridges, Maine turnpike extension, West Gardiner-Hallowell, Me., contract 216; Theodore Loranger & Sons, New Bedford, Mass. low.

135 tons, six-span girder bridge over New Haven railroad, Norwich, Conn.; bids July 12, Hartford, Conn.

Unstated, Oregon state highway general awards; Lane county, 3 overpasses to Tom Lillebo, Reedsport, Oreg., $103,512; Marion county, 2 underpasses to Lockyear & White Inc., Longview, Wash., $104,035.

Unstated, Oregon state liquor control warehouse, Milwaukie, Oreg.; C. M. Corkum Co., Portland, Oreg., low $841,897.

Unstated, shop and warehouse, Elmendorf Air Base, Alaska; bids to U. S. Engineer, Anchorage, Alaska, July 27.

PLATES . . .

PLATES PENDING

60 tons, water storage tank; Gunderson Bros. Engineering Corp., Portland, Oreg., low $17,115 to Umatilla, Oreg.

Unstated, 250,000-gal. water storage tank; bids to F. L. Kummer, recorder, Riddle, Oreg., July 16; also 14,000 feet 10 to 4-inch welded steel pipe and accessories.

RAILS, CARS . . .

LOCOMOTIVES PLACED

Boston & Maine, 12 diesel locomotives, placed with unnamed builder.

RAILROAD CARS PLACED

Army Transportation Corps, 1440 forty-ton standard gage freight cars for shipment abroad, placed, 825 box cars and 565 gondolas going to the Magor Car Corp., Passaic, N. J., and 50 hopper cars to the Thrall Co., Chicago.

Boston & Maine, 55 self-propelled rail diesel cars, to Budd Co., Philadelphia.

Canadian National, 5 passenger cars and 1 sleeping car to the Canadian Car & Foundry Co., Montreal, and 2 rail diesel cars to the Budd Co., Philadelphia.

Nashville, Chattanooga & St. Louis, 12 fifty-ton pulpwood cars, to own shops.

Reserve Mining Co., Babbitt, Minn., 350 ninety-five-ton ore cars, to unnamed builder.

RAILROAD CARS PENDING

Delaware, Lackawanna & Western, 500 to 1000 fifty-ton box cars, bids asked.

Long Island railroad, 100 passenger cars, or more, costing $15 million, bids July 28; next year this road contemplates purchase of additional passenger cars, against an expenditure of $9 million.

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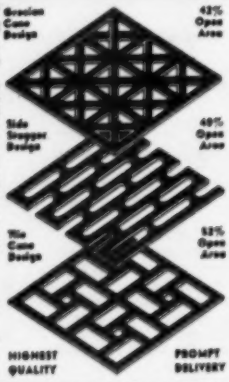

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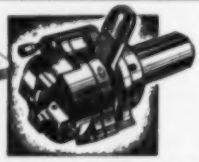

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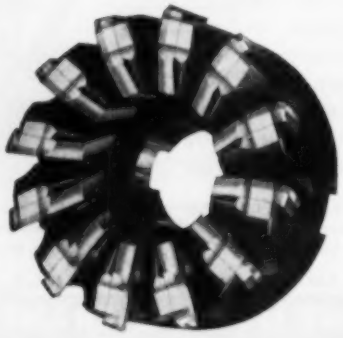

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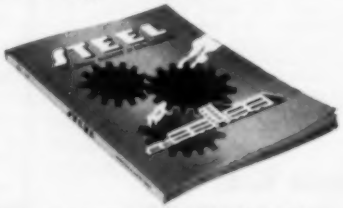

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Scrap Continues To Move Sluggishly

Prices tending downward at some points with market in summer vacation lull. Little buying is expected by mills and foundries over remainder of this month

Scrap Prices, Page 194

New York—Brokers' buying prices on No. 1 heavy melting, No. 1 bundles and No. 2 heavy melting steel are higher as a reflection of the growing export market. No. 1 heavy and No. 1 bundles are now $18 to $19, and No. 2 heavy melting $16 to $16.25. On the basis of better domestic trading, short shovel turnings have been marked up to $9 to $10. All other prices are unchanged.

Buffalo — Easier tendencies dominate the scrap market here as a leading mill buyer obtained tonnage from dealers at price reductions of $1 per ton for steelmaking grades. The mill was willing to buy more than the tonnage offered. Drop in ingot production also augmented the bearish tone. Blast furnace and cast grades, however, are unchanged.

Philadelphia—Domestic trading in scrap is sluggish although the overall situation is enlivened a bit by buying for export. Two cargoes of scrap are expected to leave this port this month, with more tonnage scheduled to be shipped abroad in August. Foreign shipments are being covered at prices at $1 or $2 above the domestic market, which remains unchanged.

Pittsburgh — Slowness in scrap shipments is due largely to plant shutdowns for July vacations. Requirements are dwindling, causing a feeling of weakness in the market.

Reflecting the dip in scrap sales, prices dropped last week an average of $1 per ton. No. 1 heavy melting price is now $28 to $29, $1 below previous quotations. Prices remain somewhat nominal in view of reduced activity.

Cleveland—The local scrap market is virtually lifeless. The mills are not buying with operations running along at curtailed rates. Foundry operations will be slow the remainder of this month with many shops closed for mass vacations. Dealers and brokers anticipate no marked change in conditions until next month. Meanwhile, prices continue to tend downward. Based on brokers' offerings in the absence of actual sales, No. 1 heavy melting is off another $1 per ton to a range of $25 to $26.

Cincinnati—Entry into the scrap market of a large mill just outside the metropolitan area served to place scrap prices on a firm footing. Lowering of prices 50 cents per ton on the open-hearth grades recently served to stimulate consumer interest. New buying started at the lower level. One district mill is currently out of the market due to the vacation period.

Detroit—Scrap prices are holding unchanged in this market, which is in the summer doldrums. Traders do not expect much change in conditions over the next couple weeks. If any change in prices develops it is expected to be on the downside.

Chicago—The steel wage agreement which assured continuity of steelmaking operations caused no more than a ripple in the scrap market. There was no increase in buying and prices held at existing levels. Only development of note following the contract was announcement by the leading producer in the district of prices it would pay for its July scrap requirements. In effect this was merely a reaffirmation of the current market on the more important steelmaking grades.

Los Angeles — With mill scrap stocks sufficient to support 8 to 10 months steel production, dealers are hopeful foundry scrap needs will sustain activity. Some sales of No. 2 bundles are noted at $16.

San Francisco — Finished steel prices are rising, but the tone of the scrap market continues unchanged. Start of the second half of the year failed to bring any change in prices. There is so much scrap on hand in the district some market observers marvel at the fact prices are holding so well. Cast grades are finding strength in continued urgent demand.

Seattle — Scrap prices have advanced $2 per ton with No. 1 heavy melting quoted $25 and No. 2 heavy melting $21. These levels are expected to hold through July.

Steel scrap is not surplus but there is sufficient tonnage available to care for current needs. However, higher prices may bring out additional tonnage.

The same situation applies in cast iron grades prices on which are un-

(*Please turn to page* 196)

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IRON AND STEEL SCRAP

Consumer prices, per gross ton, except as otherwise noted, including broker's commission, as reported to STEEL. Changes shown in italics.

STEELMAKING SCRAP COMPOSITE

July 7	$27.33
June 30	27.83
June Avg.	27.92
July, 1953	43.51
July, 1949	19.21

Based on No. 1 heavy melting grade at Pittsburgh, Chicago and eastern Pennsylvania.

PITTSBURGH

(Delivered consumer plant)

No. 1 heavy melting	*28.00-29.00*
No. 2 heavy melting	*25.00-26.00*
No. 1 bundles	*28.00-29.00*
No. 2 bundles	*23.00-24.00*
No. 1 busheling	*28.00-29.00*
Machine shop turnings	*14.00-15.00*
Mixed borings, turnings	*14.00-15.00*
Short shovel turnings	*18.00-19.00*
Cast iron borings	*18.00-19.00*
Cut structurals	*29.00-30.00*
Heavy turnings	*27.00-28.00*
Punchings & plate scrap	*31.00-32.00*
Electric furnace bundles	*30.00-31.00*

Cast Iron Grades

No. 1 cupola	*35.00-36.00*
Charging box cast	*32.00-33.00*
Heavy breakable cast	*30.00-31.00*
Unstripped motor blocks	*25.00-26.00*
No. 1 machinery cast	*42.00-43.00*

Railroad Scrap

No. 1 R.R. heavy melt.	*30.00-31.00*
Rails, 2-ft and under	*42.00-43.00*
Rails, 18-in. and under	*44.00-45.00*
Rails, random lengths	*36.00-37.00*
Railroad specialties	*33.00-34.00*

Stainless Steel Scrap

(F.o.b. shipping point)

18-8 bundles & solids	165.00-170.00
18-8 turnings	85.00-90.00
430 bundles & solids	65.00-70.00
430 turnings	50.00-52.00

CLEVELAND

(Delivered consumer plant)

No. 1 heavy melting	*25.00-26.00*
No. 2 heavy melting	22.00-23.00
No. 1 bundles	*25.00-26.00*
No. 2 bundles	19.00-20.00
No. 1 busheling	*25.00-26.00*
Machine shop turnings	12.00-13.00
Mixed borings, turnings	16.00-17.00
Short shovel turnings	16.00-17.00
Cast iron borings	16.00-17.00
Low phos.	25.00-26.00
Cut structural plate 2 ft and under	*31.00-32.00*
Alloy free, short shovel turnings	16.50-17.50
Electric furnace bundles	25.00-26.00

Cast Iron Grades

No. 1 cupola	40.00-41.00
Charging box cast	26.50-27.50
Stove plate	*33.00-34.00*
Heavy breakable cast	25.50-26.50
Unstripped motor blocks	*25.00-26.00*
Brake shoes	29.00-30.00
Clean auto cast	42.00-43.00
No. 1 wheels	32.50-33.50
Burnt cast	*27.00-28.00*
Drop broken machinery	42.00-43.00

Railroad Scrap

No. 1 R.R. heavy melt.	*30.00-31.00*
R.R. malleable	*40.00-41.00*
Rails, 2-ft and under	*42.00-43.00*
Rails, 18 in. and under	*44.00-45.00*
Rails, random lengths	*39.00-40.00*
Cast steel	*33.00-34.00*
Railroad specialties	*34.00-35.00*
Uncut tires	*35.00-36.00*
Angles, splice bars	*41.00-42.00*
Rails, rerolling	42.00-43.00

Stainless Steel

(F.o.b. shipping point)

18-8 bundles, solids	nom. 160.00-170.00
18-8 turnings	nom. 70.00-80.00
430 clips, bundles, solids	nom. 70.00
430 turnings	40.00-50.00

YOUNGSTOWN

(Delivered consumer plant)

No. 1 heavy melting	27.00-28.00
No. 2 heavy melting	22.00-23.00
No. 1 bundles	27.00-28.00
No. 2 bundles	20.00-21.00
Machine shop turnings	13.00-14.00
Short shovel turings	19.00-20.00
Cast iron borings	19.00-20.00
Low phos.	*29.00-30.00*
Electric furnace bundles	27.00-28.00

Railroad Scrap

No. 1 R.R. heavy melt.	*30.00-31.00*

PHILADELPHIA

(Delivered consumer plant)

No. 1 heavy melting	23.00
No. 2 heavy melting	21.00
No. 1 bundles	24.00
No. 2 bundles	18.00-19.00
No. 1 busheling	23.00
Electric furnace bundles	25.00*
Machine shop turnings	14.00
Mixed borings, turnings	15.00
Short shovel turnings	17.00
Structurals & plate	28.00
Heavy turnings	22.00*
Couplers, springs, wheels	31.00
Rail crops, 2 ft & under	41.00

Cast Iron Grades

No. 1 cupoa	35.00
Malleable	37.00
Heavy breakable cast	35.50
Unstripped motor blocks	nom.
Drop broken machinery	41.00

*Nominal.

NEW YORK

(Brokers' buying prices)

No. 1 heavy melting	*18.00-19.00*
No. 2 heavy melting	*16.00-16.25*
No. 1 bundles	*18.00-19.00*
No. 2 bundles	12.25-13.25
Machine shop turnings	5.00-6.00
Mixed borings, short turnings	8.00-9.00
Low phos. (structural & plate)	21.00-22.00
Short shovel turnings	*9.00-10.00*

Cast Iron Grades

No. 1 cupola	29.00-30.00
Unstriped motor blocks	19.00-20.00*

Stainless Steel

18-8 sheets, clips, solids	170.00-175.00
18-8 borings, turnings	70.00-75.00
430 sheets, clips, solids	40.00
410 sheets, clips, solids	30.00

*Nominal.

BOSTON

(Brokers' buying prices; f.o.b. shipping point)

No. 1 heavy melting	17.00
No. 2 heavy melting	15.25-15.00
No. 1 bundles	17.00
No. 2 bundles	13.25-14.25
Machine shop turnings	3.00-3.50
Mixed borings, turnings	5.50-6.00
Short shovel turnings	10.00-10.50
No. 1 cast	29.00-30.00
Mixed cupola cast	27.00-28.00
No. 1 machinery cast	32.00-33.00

CINCINNATI

(Brokers' buying prices; f.o.b shipping point)

No. 1 heavy melting	26.00-27.00
No. 2 heavy melting	23.00-24.00
No. 1 bundles	26.00-27.00
No. 2 bundles	21.00-22.00
No. 1 busheling	26.00-27.00
Machine shop turnings	11.00-12.00
Mixed borings, turnings	14.00-15.00
Short shovel turnings	14.00-15.00
Cast iron borings	14.00-15.00
Low phos. 18-in.	32.00-33.00

Cast Iron Grades

No. 1 cupola	38.00
Heavy breakable cast	36.00
Charging box cast	36.00
Drop broken machinery	45.00

Railroad Scrap

No. 1 R.R. heavy melt.	29.00-30.00
Rails, 18-in. and under	44.00-45.00
Rails, random lengths	37.00-38.00

CHICAGO

No. 1 heavy melting	*30.00-31.00*
No. 2 heavy melting	*26.00-27.00*
No. 1 factory bundles	*31.00-32.00*
No. 1 dealer bundles	29.00-30.00
No. 2 bundles	23.00-24.00
No. 1 busheling	30.00-32.00
Machine shop turnings	12.00-13.00
Mixed borings, turnings	12.00-13.00
Short shovel turnings	14.00-15.00
Cast iron borings	14.00-15.00
Cut structurals, 3-ft	*31.00-32.00*
Punchings & plate scrap	*31.00-32.00*

Cast Iron Grades

No. 1 cupola	35.00-37.00
Stove plate	31.00-33.00
Unstripped motor blocks	24.00-25.00
Clean auto cast	37.00-39.00
Drop broken machinery	37.00-39.00

Railroad Scrap

No. 1 R.R. heavy melt.	32.00-33.00
R.R. malleable	40.00-42.00
Rails, 2-ft. and under	43.00-44.00
Rails, 18-in. and under	44.00-45.00
Angles, splice bars	37.00-38.00
Rails, rerolling	42.00-43.00

Stainless Steel Scrap

18-8 clips & solids	130.00-140.00
18-8 turnings	60.00
430 clips & solids	40.00
430 turnings	20.00-22.00

DETROIT

(Brokers' buying prices; f.o.b. shipping point)

No. 1 heavy melting	19.00
No. 2 heavy melting	17.00
No. 1 bundles	20.00
No. 2 bundles	15.00
No. 1 busheling	20.00
Machine shop turnings	9.00
Mixed borings, turnings	9.00
Short shovel turnings	9.50
Punchings & plate scrap	23.50

Cast Iron Grades

No. 1 cupola	33.00
Charging box cast	27.00
Stove plate	29.00
Heavy breakable	24.00
Unstripped motor blocks	18.00
Clean auto cast	37.00
Malleable	28.00

BUFFALO

No. 1 heavy melting	*25.00-26.00*
No. 2 heavy melting	*21.00-22.00*
No. 1 bundles	*25.00-26.00*
No. 2 bundles	*19.00-20.00*
No. 1 busheling	*25.00-26.00*
Machine shop turnings	14.00-15.00
Mixed borings, turnings	17.50-18.00
Short shovel turnings	18.50-19.00
Cast iron borings	17.50-18.00
Low phos.	29.00-29.50

Cast Iron Grades

(F.o.b. shipping point)

No. 1 cupola	37.00-38.00
No. 1 machinery	41.00-42.00

Railroad Scrap

Rails, random lengths	33.00-34.00
Rails, 3-ft and under	40.00-41.00
Railroad specialties	34.50-35.50

BIRMINGHAM

No. 1 heavy melting	23.50-24.50
No. 2 heavy melting	22.00-23.00
No. 1 bundles	18.00-19.00
No. 2 bundles	16.00-17.00
Cast iron borings	13.00-14.00
Short shovel turnings	16.00-17.00
Machine shop turnings	15.00-16.00
Electric furnace bundles	26.00-27.00

Cast Iron Grades

(F.o.b. shipping point)

No. 1 cupola	43.50-44.50
Stove plate	40.50-41.50
Bar crops and plate	29.00-30.00
Structural plate 2 ft.	29.00-30.00
Unstripped motor blocks	35.00-36.00

Railroad Scrap

No. 1 R.R. heavy melt.	26.00-27.00
Rails, 18-in. and under	40.00-41.00
Rails, rerolling	39.00-40.00
Angles, splice bars	36.00-37.00
Stand. steel axles	35.00-36.00

ST. LOUIS

(Brokers' buying prices)

No. 1 heavy melting	26.50
No. 2 heavy melting	24.50
No. 1 bundles	26.50
No. 2 bundles	20.25
Machine shop turnings	12.00
Short shovel turnings	14.00

Cast Iron Grades

No. 1 cupola	37.00
Charging box cast	29.00
Heavy breakable cast	29.00
Unstripped motor blocks	29.00
Brake shoes	30.00
Clean auto cast	39.00
Stove plate	33.00

Railroad Scrap

No. 1 R.R. heavy melt.	33.50
Rails, 18-in. and under	41.00
Rails, random lengths	38.00
Rails, rerolling	44.00
Uncut tires	32.50
Angles, splice bars	33.50

SEATTLE

(Delivered consumer plant)

No. 1 heavy melting	*25.00*
No. 2 heavy melting	*21.00*
No. 1 bundles	21.00
No. 2 bundles	16.00
No. 3 bundles	13.00
Machine shop turnings	11.50
Mixed borings, turnings	11.50
Short shovel turnings	11.50
Electric furnace, No. 1	32.00

Cast Iron Grades

(F.o.b. shipping point)

No. 1 cupola	30.00-35.00
Heavy breakable cast	25.00
Unstripped motor blocks	23.00
No. 1 wheels	21.00
Stove plate(f.o.b. plant)	28.00
Brake shoes	28.00

Railroad Scrap

(Delivered consumer plant)

Rails, random lengths	30.00-34.00

SAN FRANCISCO

No. 1 heavy melting	20.00
No. 2 heavy melting	16.00
No. 1 bundles	19.00
No. 2 bundles	16.00
No. 1 busheling	20.00
Machine shop turnings	5.00
Mixed borings, turnings	5.00
Short shovel turnings	9.00
Cast iron borings	9.00
Cut structurals	25.00
Heavy turnings	9.00
Punchings & plate scrap	25.00
Electric furnace bundles	19.00

Cast Iron Grades

No. 1 cupoa	42.00-45.00
Charging box cast	35.00
Stove plate	37.00
Heavy breakable cast	36.00
Unstripped motor blocks	29.00
Brake shoes	35.00
Clean auto cast	39.00
No. 1 wheels	39.00
Burnt cast	23.00
Drop broken machinery	43.00

LOS ANGELES

No. 1 heavy melting	20.00
No. 2 heavy melting	16.00
No. 1 bundles	20.00
No. 2 bundles	16.00
Machine shop turnings	5.00

Cast Iron Grades

(F.o.b. shipping point)

No. 1 cupola	38.00-42.00

HAMILTON, ONT.

(Delivered prices)

No. 1 heavy melting	$22.00
No. 2 heavy melting	19.00
No. 1 bundles	22.00
No. 2 bundles	17.00
Mixed steel scrap	16.00
Mixed borings, turnings	12.00
Rails, remelting	32.00
Busheling, new factory: Prepared	20.00
Unprepared	16.00
Short steel turnings	12.00

Cast Iron Gradest

No. 1 machinery cast	42.00-45.00

†F.o.b., shipping point.

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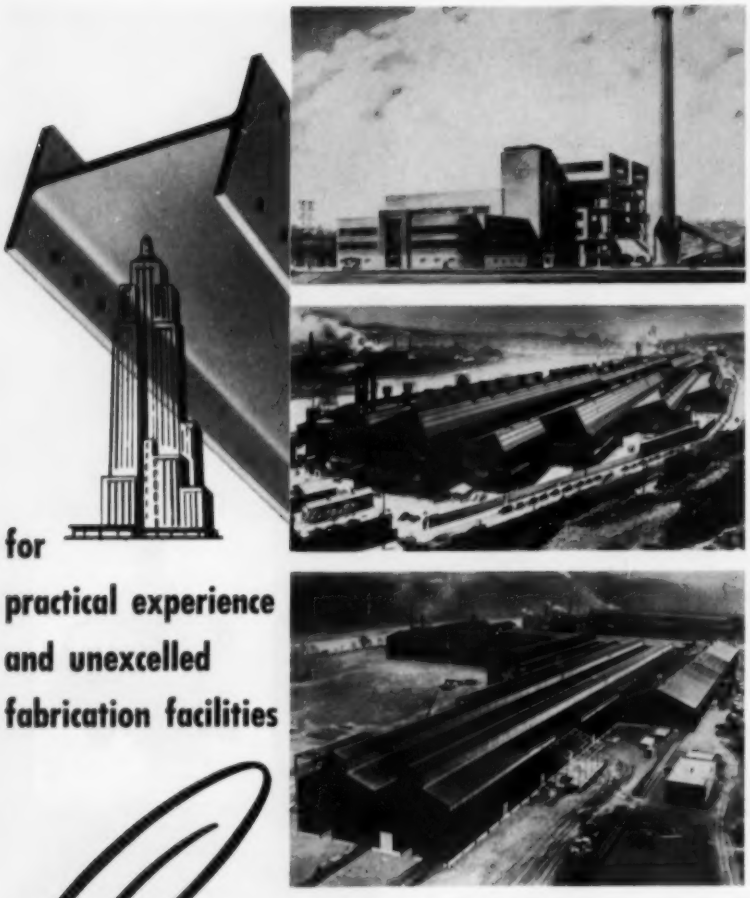

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Scrap . . .

(*Concluded from page* 193)

changed though showing signs of advancing.

Puget Sound Navy Yard, at its quarterly bidding recently sold 700 tons of prepared scrap at $23.01, f.o.b. cars, Bremerton, Wash., and 2000 tons of unprepared at $20.01. The buyer was United Steel Products Inc., Seattle.

Plates . . .

Plate Prices, Page 174

New York—Negotiations for supplying fabricated steel pipe for the longest and, perhaps, the heaviest petroleum products line ever undertaken in this country will probably be concluded within the next two or three weeks.

The project is the 1910-mile line of the American Pipeline Corp. to be laid from Beaumont, Tex., to Newark, N. J., and which, as reported recently in STEEL, will require 437,000 tons of steel. In addition there will be large tonnages in the aggregate for some 75 miles of leader lines, pumping stations, terminals, radio towers and various miscellaneous items such as flanges, gages, valves, pumps, motors, etc. Work will be completed within a year.

Purchases are being handled through Engineers Ltd., Chanin building, 42nd street and Lexington avenue, New York, engaged to manage the engineering and construction. Indications are that a number of fabricators will participate, with the business doing much to stimulate a badly lagging plate market, to say nothing of providing a needed lift to operations of the fabricators.

Boston — Small tank orders are slackening. At least one shop has built up a stock of finished units in standard sizes, including household fuel tanks. Petrolem product storage capacity is expanding, tanks for Webber Tanks Inc., Bucksport, Me., taking several hundred tons. Most active shops are those with contracts for air base fuel storage.

Competition for fabricated plate work narrows profit margins and with a wide range of prices applying on carbon grades, an increase in plate prices will be under pressure. Buying is mostly in lighter sizes for prompt delivery to cover bookings only. Heads and flanged plates can be shipped in three weeks, clad plates in six weeks.

Philadelphia—Plate prices are gen-

erally higher, reflecting recent increases in labor costs. However, demand still lags.

Bethlehem, Lukens, Alan Wood and Claymont Division, Colorado Fuel & Iron Corp. have advanced carbon plate prices $2.50 per ton in line with action taken last week by the leading producer. Central Iron & Steel has taken no action.

Among producers to have advanced alloy plates $5 a ton are Lukens and Claymont. Following lead of U. S. Steel Corp., Alan Wood has increased floor plates $2.50. Claymont has increased the price of carbon steel going into flange work $2.50 and Lukens is making adjustments in clad and flange products.

Pittsburgh—Construction company purchasing agents expect to pay higher prices for steel in mid-third quarter, but this will not affect heavy plate shipments to this industry. Large amounts are being used in such applications as construction of heavy pipe.

Warehouse buying is slowing down, and the railroads continue to require only small steel plates. With a large number of plant shutdowns for vacations, this month may be the slowest this year in shipments from this area.

Wire . . .

Wire Prices, Page 176

New York—Volume of wire orders is down. Mill bookings are the smallest this year. Most consumers are holding up shipments until after vacations, although in some cases tonnage is being taken in before plant shutdowns.

Mills are operating on flexible schedules, well below capacity. More mills this summer are staggering vacations.

Most nonintegrated producers have worked down topheavy rod inventories to better balance, although this has been a slow process. Automotive volume, including valve spring wire, has slackened, also most high carbon specialties. Rope wire is slow with numerous rope machines down.

Boston—With finishing operations under 50 per cent of capacity, more wire mills are staggering vacations. There are openings for most products for July shipment. Forward bookings are light and consumers of spring wire grades are operating close to needs. Inventories are down and buying is sensitive to bookings of fabricated finished products.

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PLANT MANAGER—M.I.T. Engineering Graduate with Proven Record in Plant Supervision and Control, Qualified as Production Manager or Chief Industrial Engineer. Reply Box 992, STEEL, Penton Building, Cleveland 13, Ohio.

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CAMPBELL Model #510

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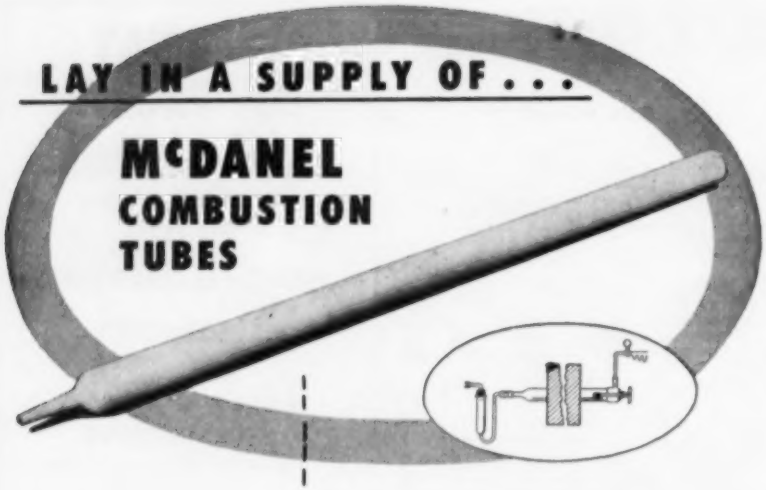

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Beaver Falls . . . Penna.

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PORCELAIN SPECIALTIES
Your Porcelain requirements—large or small
—are considered important by McDANEL.

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DIES · RIVET SETS
COMPRESSION
RIVETER DIES

Made of highest standards and uniform quality thus insuring maximum service.
Since 1903

Large inventory of stock sizes of round punches and dies also rivet sets available for immediate shipment. Square, rectangular, oblong and elliptical shapes made to order.

Write Dept. A for New Catalog 54

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Advertising Index

Acme Welding Division of The United Tool & Die Co. 4
Aeroquip Corporation 44
Alliance Machine Co., The 46, 47
Allison Co., The 158
Aluminum Company of America 37, 38, 39, 40
American Brake Shoe Co., National Bearing Division 152
American Brass Co., The 131
American Chain & Cable, Page Steel & Wire Division 104
American Gas Association 54
American Gas Furnace Co. 190
American Pulverizer Co. 118
American Steel & Wire Division, United States Steel Corporation 17
Anaconda Wire & Cable Co. 96, 97
Apex Tool & Cutter Co., Inc 192
Arcos Corporation 160, 161
Armco Steel Corporation 62
Atlas Chain & Manufacturing Co. 91

Babcock & Wilcox Co., The, Refractories Division 119
Babcock & Wilcox Co., The, Tubular Products Division 48
Backer Bros. Carbon Co. 197
Bethlehem Steel Co. 1, 200
Birdsboro Steel Foundry & Machine Co. 56
Bliss & Laughlin, Inc. 28
Bliss, E. W., Co. 117
Brad Foote Gear Works, Inc. 133
Broderick & Bascom Rope Co. 123
Browning, Victor R., & Co., Inc. 188
Bullard Co., The 80
Burgess-Norton Mfg. Co. 41

Cadman, A. W., Mfg. Co. 188
Carborundum Co., The, Refractories Division 99
Carpenter Steel Co., The, Alloy Tube Division 159
Cattie, Joseph P., & Brothers, Inc. 192
Chambersburg Engineering Co. 132
Chemsteel Construction Co., Inc. 193
Chicago Tramrail Corporation 106
Cincinnati Bickford Tool Co., The 29
Cincinnati Shaper Co., The 14, 15
Clark Equipment Co., Industrial Truck Division 151
Cleveland Steel Tool Co., The 192
Cleveland Worm & Gear Co., The Inside Back Cover
Colorado Fuel & Iron Corporation, The, Wickwire Spencer Steel Division 93
Columbia-Geneva Steel Division United States Steel Corporation 17, 20
Consolidated Industries, Inc. 144
Consolidated Machine Tool Corporation 148, 149
Coolidge Corporation 87
Cooper-Bessemer Corporation, The 35
Copperweld Steel Co., The 83
Copperweld Steel Co., Ohio Seamless Tube Division 108
Crucible Steel Company of America 179
Cutler-Hammer, Inc. Back Cover

De Laval Steam Turbine Co. 142
Detrex Corporation 101
Diamond Manufacturing Co. 192
Dulien Steel Products, Inc. 197
Du Pont, E. I., de Nemours & Co., Inc. 45

Eastern Machine Screw Corporation, The 192
Ederer Engineering Co. 34
Elastic Stop Nut Corporation of America 155
Electric Controller & Mfg. Co., The Inside Front Cover
Electric Equipment Co. 197

Fafnir Bearing Co., The 21

Fairbanks, Morse & Co. 52
Follows Gear Shaper Co., The 165
Ferracute Machine Co. 53
Follansbee Steel Corporation 166
Fort Pitt Bridge Works 196

Garlock Packing Co., The 156
General American Transportation Corporation, Parker-Kalon Division 163
General Electric Co. 57
Globe Steel Abrasive Co., The 94
Gorham Tool Co. 12
Gould-National Batteries, Inc. 30
Grip Nut Co. 193

Hallden Machine Co., The 138
Handy & Harman 182
Hanson-Van Winkle-Munning Co. 122
Hevi Duty Electric Co. 140
Hill-Chase & Co. 197
Hyde Park Foundry & Machine Co. 199

Independent Engineering Co., Inc. 16
Ingersoll-Rand 76
International Business Machines 157
Iron & Steel Products, Inc. 197

Johns-Manville 26
Jones & Laughlin Steel Corporation 51

Kaiser Aluminum & Chemical Sales, Inc. 102, 103
Kaiser Aluminum & Chemical Sales Inc., Kaiser Chemicals Division 187
Kaiser Engineers Division of Henry J. Kaiser Co. 32
Kennametal, Inc. 27
Kidde, Walter, & Co., Inc. 10

Lapointe Machine Tool Co., The 11
Levinson Steel Co., The 183
Lewis Welding & Engineering Corporation 100
Linde Air Products Co., A Division of Union Carbide & Carbon Corporation 32
Link-Belt Co. 13
Lord Baltimore Hotel 193
Lurie Brothers & Co., Inc. 195

McDanel Refractory Porcelain Co. 198
McKay Machine Co., The 75

Macleod Co., The 189
Macwhyte Co. 3
Mahon, R. C., Co., The 137
Marchant, Geo. F., Co. 198
Marit Products, Inc. 188
Metalwash Machinery Corporation 5
Minnesota Mining & Mfg. Co. 162
Morse Twist Drill & Machine Co. 24, 25

National Automatic Tool Co., Inc. 33
National Bearing Division, American Brake Shoe Co. 152
National-Standard Co. 139
National Steel Corporation 43
National Tube Division, United States Steel Corporation 17
Nicholson File Co. 121
Norton Co. 31

Ohio Seamless Tube Division of Copperweld Steel Co. 108

Page Steel & Wire Division, American Chain & Cable 104
Parker-Kalon Division, General American Transportation Corporation 163
Pawtucket Manufacturing Co. 6
Pittsburgh Lectromelt Furnace Corporation 8
Pollock, William B., Co., The 42

Remington Rand, Inc. 9
Ren-ite Plastics, Inc. 190
Republic Steel Corporation, Union Drawn Steel Division 30
Robbins & Myers, Inc. 145
Roebling's, John A., Sons Corporation, Subsidiary of The Colorado Fuel & Iron Corporation 61
Ryerson, Joseph T., & Son, Inc. 66

Sargeant & Wilbur, Inc. 184
Sciaky Bros., Inc. 105
Seaboard Screw Corporation 188
Service Steel 192
Silent Hoist & Crane Co. 191
SKF Industries, Inc. 2
Square D Co. 23
Standard Pressed Steel Co. 49
Standard Tube Co., The 143
Stanley Works, The, Steel Strapping Division 136
Superior Steel Corporation 141
Surface Combustion Corporation 124, 125

Tennessee Coal & Iron Division, United States Steel Corporation 17, 20
Texas Co., The 58
Timken Roller Bearing Co., The, Steel & Tube Division 84
Tinnerman Products, Inc. 88
Toledo Stamping & Manufacturing Co. 192
Tomkins-Johnson Co., The 130
Torrington Co., The 65

Union Carbide & Carbon Corporation, Linde Air Products Co. 32
Union Drawn Steel Division, Republic Steel Corporation 30
United Engineering & Foundry Co. 107
United Mfg. Co. 86
United States Graphite Co., The 36
United States Steel Corporation, Subsidiaries 17, 18, 19, 20
United States Steel Export Co. 17, 20
United State Steel Supply Division United States Steel Corporation 17, 20
United Tool & Die Co., The, Acme Welding Division 4

Vanadium Corporation of America 173
Vaughn Machinery Co., The 55
Verson Allsteel Press Co. 7
Victor Equipment Co. 127

Weirton Steel Co. 43
Wheeling Steel Corporation 188
Wickwire Spencer Steel Division of The Colorado Fuel & Iron Corporation 93
Wisconsin Motor Corporation 184

Zeh & Hahnemann Co. 188

Table of Contents, Page 5

Classified Advertising, Page 197

Hyde Park

RED CIRCLE Rolls ALLOY-CHILLED

Red Circle Rolls for all Purposes

Hyde Park Red Circle Rolls are outstanding in quality and in performance and are easily identified by the Red Circle.

for
finer finish
long life
greater tonnage
Specify Red Circle

Chilled Rolls
Alloy Iron Rolls
Moly Rolls
Nickel Chilled Rolls
Grain Rolls
Cold Rolls
Sand Rolls

Hyde Park

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Hyde Park, Westmoreland County, Pa.

ROLLS
ROLLING MILL MACHINERY
GREY IRON CASTINGS

CALL BETHLEHEM FOR PLATE STEEL Bethlehem sheared and universal plates come in a complete range, to meet virtually every need. We produce the following types in a wide size range – Flange, Forging, Firebox, Structural, Abrasive-Resisting, Medium-Manganese, Mayari R (high-strength, low-alloy), Alloy and Marine. For full information, write to the nearest Bethlehem office.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

• This Cleveland double reduction unit provides complete reduction—96.6:1—in one rugged housing with one oiling system. It is driving a Coil Upender at the Mandrel type coiler which coils hot strip (18" minimum to 49½" maximum) into coils 38" minimum O.D. to 54" maximum O.D. Photo courtesy of Pittsburgh Engineering and Machine Co.

CLEVELAND keeps hot strip rolling at Detroit Steel

YOU can find Clevelands on the tough jobs—always driving smoothly. So trouble-free are they that maintenance men call them "always dependable." That's why Cleveland worm gear speed reducers are specified for exacting jobs like this one—driving the expanding mechanism for this hot strip upcoiler at Detroit Steel's Portsmouth (Ohio) Division.

Cleveland features the case-hardened steel worm that meshes with nickel-bronze gear. This combination gives up to 50% increased resistance to shock and wear. Parts are enclosed in an oil bath in a dirt-tight housing. Result is long life—Clevelands installed back in the twenties are operating as efficiently today as when they were new. And Clevelands *cost no more* than an ordinary drive.

If you are a builder or a user of equipment that must have a dependable drive, be sure to get the presentation of the complete Cleveland line. Write for Catalog 400. The Cleveland Worm and Gear Company, 3270 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.

CLEVELAND
Worm Gear
Speed Reducers

THE THREE CUTLER-HAMMER STARS
★ ★ ★
STAND FOR THREE NEW STANDARDS

☆ *installs easier*

☆ *works better*

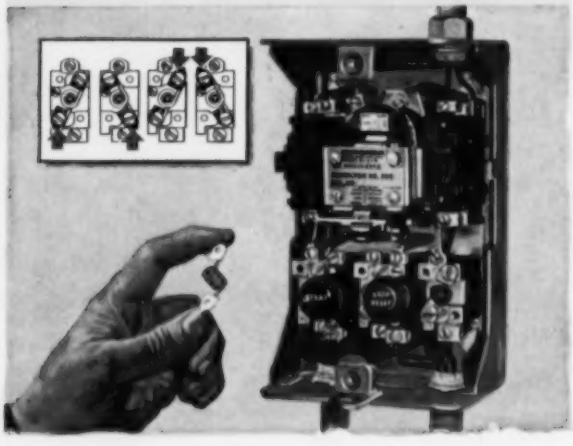
☆ *lasts longer*

Electrical interlocks...

Up to four extra control circuits may be added by simple installation of interlock blocks. Contacts can be normally open, normally closed, or both. A screw driver is the only tool needed.

Adjustable overload coils...

Each heater coil can be placed in any of four positions to permit adjustment of the overload protection to within 3% of the motor rating...compared to 10% or 12% on competitive control.



Full three-phase protection...

Another Cutler-Hammer "first." Now the widely demanded three-coil overload protection, so necessary to prevent single-phasing motor burn-outs, is here as an optional feature in standard starter constructions and enclosures. *Complete* 3-Phase protection ...without the high cost of special starter assemblies or the many problems of cumbersome off-size enclosures.

Better performance is more than a mere claim in the spectacular new Cutler-Hammer ☆☆☆ Motor Control. Field tested for more than two years in hundreds of the most difficult jobs before it was ever released for sale. Compared with every make of control by actual users... to have most say, "Better than anything we have ever used." Loaded with new features, a few of which are described all too briefly above. Try it now! Order from your nearby Cutler-Hammer Authorized Distributor today. CUTLER-HAMMER, Inc., 1211 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER ★ ★ ★ MOTOR CONTROL

GUIDE FOR steel buyers

Looking for the closest mill for steel? Looking for some special form or size? Here are your answers. This guide shows U. S. mills which make finished forms of carbon, silicon, alloy and high-strength low-alloy steels. In many cases sizes are shown. Tool steels and stainless steels were covered in earlier guides. This is a refinement and expansion of the original "Guide for Steel Buyers" published in 1951.

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SECTION TWO

COMPILED BY THE EDITORS OF STEEL PENTON BUILDING • CLEVELAND 13

JULY 12, 1954

ONE DOLLAR PER COPY

CONTENTS

How To Use the Guide 1

Gage Equivalents 2

Key to Producers 37

Guide for Steel Buyers 39

Index to Companies by Products 110

Index to Advertisers 112

Standard Classification Charts . . . . . Inside Back Cover

Index to Products

BARS

Flats 57-60
Half Ovals 64
Half Rounds 62
Hexagons 63
Miscellaneous
- Abrasion Resistant 71
- Rail Steel Bars 71
- Wrought Iron Bars 71

Octagons 63
Ovals (blunt) 64
Ovals (sharp) 63
Reinforcing 71
Rounds 62
Squares 61
Squares, Round Cornered 61

BAR-SIZE SHAPES

Angles 65-68
Channels 69-70
Special Sections 70
Tees 70
Zees 70

ELECTRICAL STEEL

Armature Grade 48
Dynamo Grade 49
Electrical Grade 48
Field Grade 48
Motor Grade 49
Transformer 52 50
Transformer 58 50
Transformer 65 49
Transformer 72 49
Transformer 73 50
Transformer 80 50
Transformer 90 50
Transformer 100 50

NAILS 88-90

PIPE

Standard
- Black 80
- Galvanized 80

Wrought Iron 80

PLATES

Abrasion Resistant 56
Commercially Pure Iron 56
Corrugated Culvert 56
Floor Plate 56
Sheared or Flame Cut 51-53
Strip Mill 56
Universal 54-56
Wrought Iron 56

SEMIFINISHED

Billets, Forging 81
Blooms, Forging 81
Ingots, Forging 81
Slabs, Forging 81
Wire Rods 81

SHEETS

Abrasion Resistant 44
Aluminum Coated 44
Blued Stock 44
Cold-Rolled 40-42
Commercially Pure Iron 44
Corrugated Culvert 44
Electrolytically Coated 44
Enameling 44
Galvanized 42-43, 44
Galvannealed 43
Hot-Rolled 39-40
Long Ternes 44

STRIP

Abrasion Resistant 47
Cold-Rolled 46-47
Commercially Pure Iron 47
Electrolytically Coated 47
Hot-Rolled 44-45
Spring 47

STRUCTURALS

Angles 72
Beams 72
Bearing Piles 73
Channels 73
Cold-Formed Sections 73
Sheet Piling 73
Special Sections 73
Tees 73
Zees 73

TIN MILL PRODUCTS

Hollowware Enameling Black Plate 50
Manufacturing Ternes 50
Roofing Short Ternes 50
Tin Plate 50

TUBING

Mechanical
- Seamless 74-75
- Welded 75-79

Pressure 79
Rail Steel 79

WIRE

Coarse Round 82-86
Fine Round 86-87

How To Use the Guide

IN THIS GUIDE some products are listed according to sizes, where they are produced and who produces them. For other products, sizes are not shown but the production points and the producers are. Name of the producer is indicated by a code number, the key of which is on pp. 37 and 38. The code is the same as that used in the market price section of STEEL so that the guide can be used easily in conjunction with STEEL's weekly price service.

Where sizes of products are given, this guide shows the range of sizes made, if possible. In instances where it is impracticable to use the range method, the guide lists each individual size produced. Where range of sizes is given there is no guarantee that all intermediate sizes can be supplied by the producer.

If you need special sizes of steel, consult one or more of the producers listed in this guide.

In all cases, inquiries should be addressed to the producers' home offices listed on pp. 37 and 38.

In addition to indicating where the various forms of steel are produced, the guide contains helpful reference tables on p. 2.

In listing flat-rolled steel, this guide follows, as far as possible, the standard classifications of products. Charts showing the standard classifications of hot-rolled and cold-rolled flat products are features of this guide. In some instances, it will be noticed that producers have chosen to depart slightly from the standard classifications. The charts are on inside back cover.

Other notes that should be observed in using the guide follow:

SHEETS—Thickness of carbon and high-strength sheets is expressed in decimals of an inch. Because some people still express sheet thickness by gage numbers, this guide carries on p. 2 a table of decimal equivalents of manufacturers' standard gages of steel sheets. In most instances this guide shows the range of thicknesses of sheets produced, along with the maximum widths available within those ranges. Thickness of galvanized and silicon sheets is expressed in gage numbers. Decimal equivalents of those gages are shown on p. 2.

STRIP—In addition to thickness, minimum and maximum widths of strip are given in most instances. Minimum and maximum widths may not be available in the full range of thickness shown.

PLATES—For plates, thickness and a range of width and length are given.

BARS—Where range of thicknesses and widths is shown for flat bars it does not mean necessarily that the minimum thickness and maximum width can be obtained in one bar.

MECHANICAL TUBING—Minimum and maximum ODs are not necessarily available in the whole range of wall thicknesses listed. The minimum and maximum ODs are often dependent on wall thickness.

HIGH-STRENGTH LOW-ALLOY—Because of typographical limitations, high-strength low-alloy steels are listed in this guide as high-strength steels.

NAILS—Because a complete listing of nails would contain well over 3000 types and sizes, it is desirable to list in this guide only a representative few by types and end uses. Buyers are invited to query producers about nails not listed here.

TABLE OF DECIMAL EQUIVALENTS

1/64	.0156	33/64	.5156
1/32	.0312	17/32	.5312
3/64	.0468	35/64	.5468
1/16	.0625	9/16	.5625
5/64	.0781	37/64	.5781
3/32	.0937	19/32	.5937
7/64	.1093	39/64	.6093
1/8	.1250	5/8	.6250
9/64	.1406	41/64	.6406
5/32	.1562	21/32	.6562
11/64	.1718	43/64	.6718
3/16	.1875	11/16	.6875
13/64	.2031	45/64	.7031
7/32	.2187	23/32	.7187
15/64	.2343	47/64	.7343
1/4	.25	3/4	.75
17/64	.2656	49/64	.7656
9/32	.2812	25/32	.7812
19/64	.2968	51/64	.7968
5/16	.3125	13/16	.8125
21/64	.3281	53/64	.8281
11/32	.3437	27/32	.8437
23/64	.3593	55/64	.8593
3/8	.3750	7/8	.8750
25/64	.3906	57/64	.8906
13/32	.4062	29/32	.9062
27/64	.4218	59/64	.9218
7/16	.4375	15/16	.9375
29/64	.4531	61/64	.9531
15/32	.4687	31/32	.9687
31/64	.4843	63/64	.9843
1/2	.5	1	1.0

DEFORMED REINFORCING BAR NUMBERS

Size Number	Diameter Inches
3	.375
4	.500
5	.625
6	.750
7	.875
8	1.000
9*	1.128
10*	1.270
11*	1.410

*Bars numbered 9, 10 and 11 correspond to former 1 in. square, 1 1/8 in. square and 1 1/4 in. square sizes, and are equivalent to those former standard bar sizes in weight and nominal cross-sectional areas.

Gage Equivalents

FOR VARIOUS STEEL PRODUCTS

(INCHES)

Gage Number	Manufacturers' Standard Gage	Birmingham (Stubs Iron) Wire Gage B.W.G.	Mfr's Std. Electrical Steel Gage	Galvanized Sheet Gage	Steel Wire Gage (Washburn & Moen)
7/0					.490-.469
6/0					.4615-.438
5/0		.500			.4305-.403
4/0		.454			.3938-.370
3/0		.425			.3625-.339
2/0		.380			.331-.313
1/0		.340			.3065-.289
1		.300			.283-.268
2		.284			.2625-.248
3	.2465-.2317	.259			.2437-.230
4	.2316-.2168	.238			.2253-.212
5	.2167-.2018	.220			.207-.196
6	.2017-.1869	.203			.192-.181
7	.1868-.1719	.180			.177-.166
8	.1718-.1570	.165			.162-.152
9	.1569-.1420	.148			.1483-.138
10	.1419-.1271	.134		.1451-.1308	.135-.124
11	.1270-.1121	.120	.1250	.1307-.1159	.1205-.109
12	.1120-.0972	.109	.1090	.1158-.1009	.1055-.095
13	.0971-.0822	.095	.0940	.1008-.0860	.0915-.083
14	.0821-.0710	.083	.0780	.0859-.0748	.080-.074
15	.0709-.0636	.072	.0700	.0747-.0673	.072-.065
16	.0635-.0568	.065	.0625	.0672-.0606	.0625-.056
17	.0567-.0509	.058	.0560	.0605-.0546	.054-.0491
18	.0508-.0449	.049	.0500	.0545-.0486	.0475-.0426
19	.0448-.0389	.042	.0435	.0485-.0426	.0410-.0363
20	.0388-.0344	.035	.0375	.0425-.0382	.0348-.0325
21	.0343-.0314	.032	.0340	.0381-.0352	.0317-.0294
22	.0313-.0284	.028	.0310	.0351-.0322	.0286-.0265
23	.0283-.0255	.025	.0280	.0321-.0292	.0258-.0237
24	.0254-.0225	.022	.0250	.0291-.0262	.0230-.0211
25	.0224-.0195	.020	.0220	.0261-.0232	.0204-.0187
26	.0194-.0172	.018	.0185	.0231-.0210	.0181-.0175
27	.0171-.0157	.016	.0170	.0209-.0195	.0173-.0165
28	.0156-.0142	.014	.0155	.0194-.0180	.0162-.0153
29	.0141-.0128	.013	.0140	.0179-.0165	.0150-.0143
30	.0127-.0113	.012	.0125	.0164-.0150	.0140-.0134
31	.0112-.0101	.010			.0132-.0129
32	.0100-.0094	.009	.0100		.0128-.0121
33	.0093-.0086	.008			.0118-.0108
34	.0085-.0079	.007			.0104-.0097
35	.0078-.0071	.005			.0095-.0091
36	.0070-.0066	.004			.0090-.0086
37	.0065-.0062				.0085-.0081
38	.0061-.0058				.0080-.0076
39					.0075-.00712
40					.007-.0067
41					.0066-.0063

If you use:

Flat-Rolled Products

Hot and Cold Rolled Sheet and Strip . . . Cold Rolled Thomas Strip electro-coated with zinc, copper, brass, nickel and lead alloy . . . Hot dipped tin or lead alloy coated . . . lacquer coated . . . uncoated spring steel

Seamless Tubular Products

Oil Country Tubular Products . . . Mechanical Tubing . . . Pressure Tubing . . . Automotive and Aircraft Tubing

Wire and Wire Products

Basic Wire . . . Cold Heading Wire . . . High Carbon Spring Wire . . . Oil Tempered Spring Wire . . . Shaped Wire . . . Rope Wire . . . Core Wire (ACSR) . . . Welding Wire . . . Merchant Quality Wire . . . Barbed Wire . . . Farm and Poultry Fence . . . Lawn Fence . . . Chain-Link Fence . . . Wire Nails and Staples . . . Welded Steel Fabrics

Brush Wire . . . Aircraft Wire . . . Bobby Pin Wire . . . Rope Wire . . . Card Wire . . . Tire Bead Wire . . . Music Wire . . . Heddle Wire . . . Spring Wire, Hard Drawn and Oil Tempered . . . Hose Reinforcement Wire

Reinforcing Fabric for Buildings, Roads, Concrete Pipe, Pre-cast Gypsum and Miscellaneous Concrete Construction . . . "Steeltex" Lath for Floors, Plaster, Brick and Masonry Veneer and Stucco . . . Safety Highway Guard . . . Railroad Freight Car Bulkheads . . . Wire Pallets and "Cargotainers" for Materials Handling

---

Coke and Coal Chemicals . . . Basic Pig Iron . . . Ingots . . . Slabs . . . Blooms . . . Billets . . . Wire Rods

You can order from any of these sales offices:

District Sales Offices

Atlanta, Georgia • Chicago, Illinois • Cleveland, Ohio • Columbus, Ohio • Dallas, Texas • Detroit, Michigan • Dayton, Ohio • Houston, Texas • Los Angeles, California • New York, New York • Philadelphia, Pennsylvania • Pittsburgh, Pennsylvania • San Francisco, California • Tulsa, Oklahoma • Warren, Ohio

Warehouses

Chicago, Illinois • Cleveland, Ohio • Detroit, Michigan • Louisville, Kentucky • Los Angeles, California

"Everything New But The Name"

Pittsburgh Steel Company

Grant Building • Pittsburgh 30, Pennsylvania

Write for your free copy of the 24-page color brochure "The New Pittsburgh Steel Company"

CMP *Precision* COLD ROLLED *Carbon* Strip Steel

AVAILABLE IN ANY

grade gauge width temper finish

TO GIVE YOU *BEST* RESULTS AT *LOWER* COST

LOW CARBON

GRADE: .25% carbon and under

GAUGE: .001" and heavier

WIDTH: ¼" to 23⅞" wide (both inclusive)

TEMPER: Dead Soft Annealed, Skin Rolled, Quarter, Half and Full Hard

FINISH: No. 2 (standard cold rolled finish)

No. 3 (mirror-finish for plating)

HIGH CARBON SPRING STEEL

GRADE: .26/.40% carbon
over .40% to .80% carbon
over .80% to 1.05% carbon
over 1.05% to 1.35% carbon
(any practical controlled structure for best response to specified heat treatment)

GAUGE: .001" and heavier

WIDTH: ¼" to 23⅞" wide (both inclusive)

TEMPER: Dead Soft Annealed, Skin Rolled and Full Hard

FINISH: No. 2 (standard cold rolled finish)

No. 3 (mirror-finish for plating)

ELECTRO ZINC COATED

A phosphate base with a pure, tightly-adhering zinc coating that withstands severest forming operations without cracking or peeling

Attractive satin finish

Excellent corrosion resistance . . . suitable for enameling or painting

Gauges and widths same as Low Carbon

TEMPERED SPRING STEEL

Scaleless blue

Tempered and polished

Tempered, polished and colored

Specialty Tempered Spring Steel for Feeler Gauges, Vibrator Reeds, Camera Main Springs, Band Saws, Tapes, Textile Steel, etc.

IN COILS OR CUT TO LENGTH

Fractional-inch widths furnished in oscillated-wound coils. Other sizes can be furnished in extra-long ribbon-wound coils . . . up to 300 lbs. per inch of width.

FROM WAREHOUSE . . . . OR MILL

the Cold Metal Products co.

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MILLS: Youngstown, Ohio; Indianapolis, Indiana

WAREHOUSES: Kenilworth Steel Co., 750 Boulevard, Kenilworth, N. J. Phone—New York, COrtlandt 7-2427; New Jersey, UNionville 2-6900

Precision Steel Warehouse, Inc., 4409-4423 West Kinzie St., Chicago 24, Ill. Phone COlumbus 1-2700

The Cold Metal Products Co. of California, 6600 McKinley Ave., Los Angeles. Phone PLeasant 3-1291

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Wingman to Industry

As your company "zeroes in" on greater sales — remember, Dolan Steel has you covered on Cold Rolled Strip in Coils and Lengths!

We like to work close...

CLOSE TOLERANCE

Every inch of Dolan Cold Rolled Strip Steel is minutely checked with Electronic Gauges to insure accurate uniform strip in any gauge, temper or finish.

CLOSE DELIVERY

Steel distribution has entered the "Jet Age." By stocking thousands of tons of steel, Dolan can offer delivery measured in hours on Cold Rolled Strip. Your lead time can be slashed, dollars can be saved on handling and storage. For this "super service" you pay no "premium." Our volume guarantees *mill price*—now and in the future.

If you require one complete source for flat rolled steel . . . it should be . . .
If you require several sources for flat rolled steel . . . one of them should be . . .

DOLAN

Steel Company Inc.

810 UNION AVENUE BRIDGEPORT, CONNECTICUT

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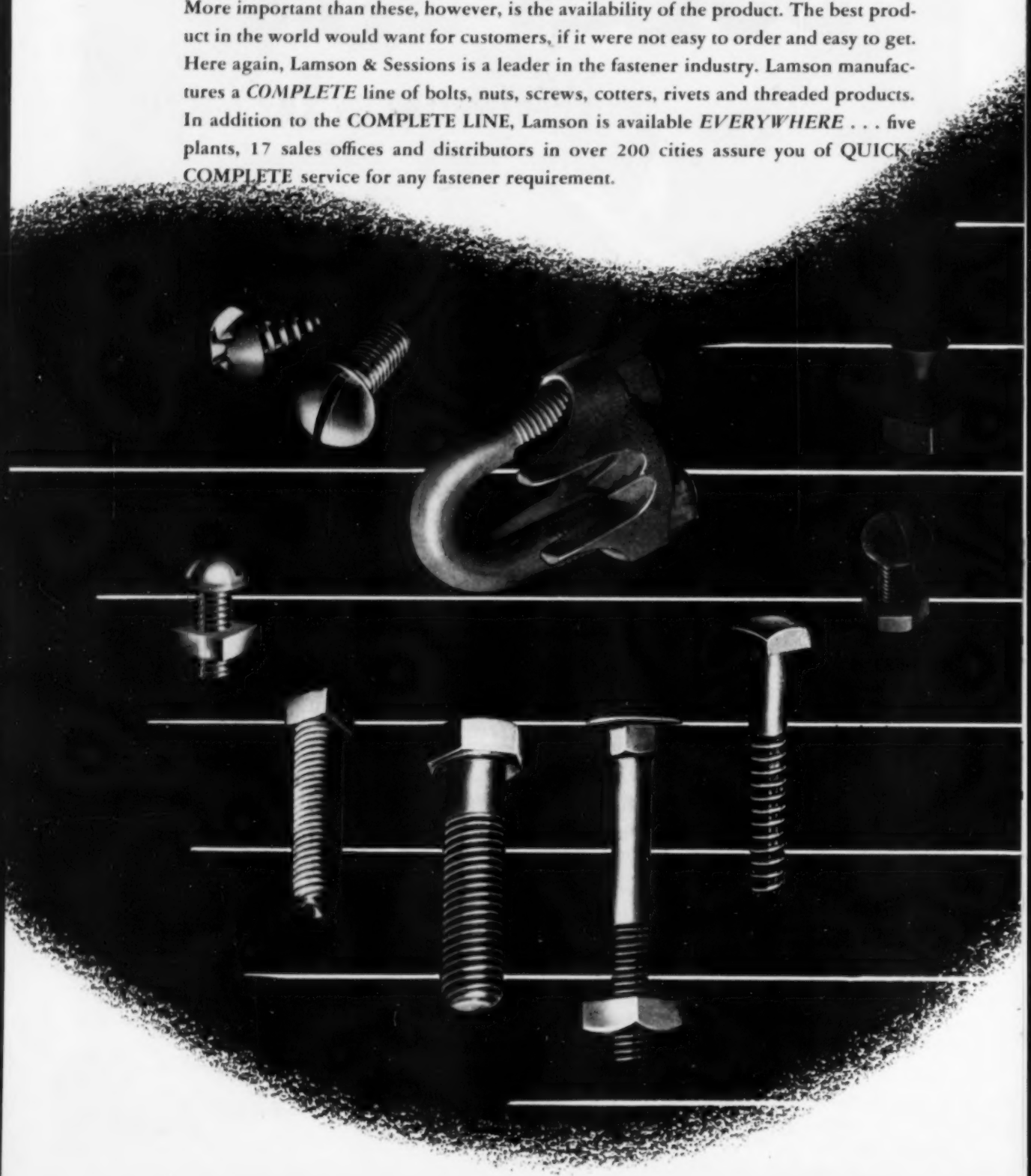
LAMSON IS EVERYWHERE.

● Many things contribute to the worth of a product . . . the research, the raw material, the manufacturers' machines, skill and experience, the business ethics and many more. More important than these, however, is the availability of the product. The best product in the world would want for customers, if it were not easy to order and easy to get. Here again, Lamson & Sessions is a leader in the fastener industry. Lamson manufactures a *COMPLETE* line of bolts, nuts, screws, cotters, rivets and threaded products. In addition to the COMPLETE LINE, Lamson is available *EVERYWHERE* . . . five plants, 17 sales offices and distributors in over 200 cities assure you of QUICK, COMPLETE service for any fastener requirement.



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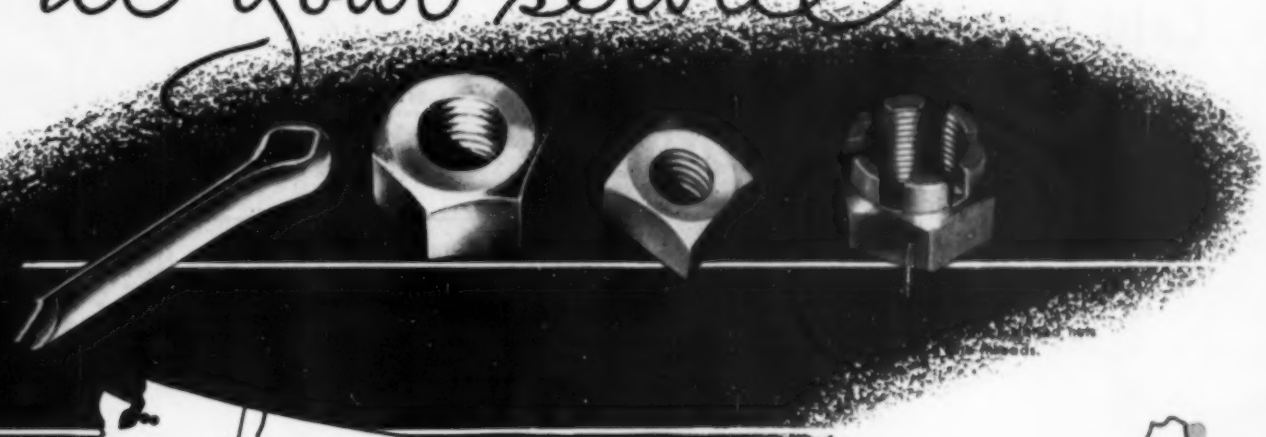
. at your service



PLANTS

SALES OFFICES

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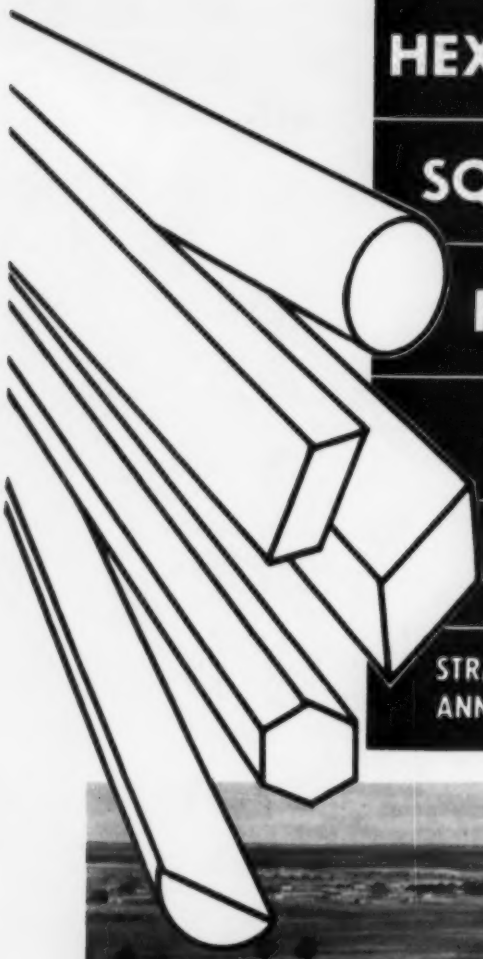
Cold Drawn Carbon & Alloy Bars and Wire



	DIMENSIONS	MILL LENGTH
ROUNDS	¼" to ¾" Over ¾" to 4½" Coils: ½" to 1"	2 to 24 ft. 10 to 24 ft. Shorts saw cut
HEXAGONS	5/16" to ⅝" Over ⅝" to 2⅜" Coils: 5/16" to 1"	2 to 25 ft. 10 to 24 ft. Shorts saw cut
SQUARES	½" to ⅝" 11/16" to 2⅜" Coils: ½" to 1"	2 to 25 ft. 10 to 24 ft. Shorts saw cut
FLATS	½" to 1" x 5/16" to 3½" 1-1/16" to 4" x 3-9/16" to 8"	10 to 24 ft.
SPECIAL SECTIONS	On application	
MAGNETIC TESTED BARS	½" to 2-15/16" 5/16" to 2½" To 2-15/16"	(in Rounds) (in Hexagons) (Width in Flats)
STRAIN OR STRESS ANNEALED BARS	All sizes and grades of cold drawn bars can be strain annealed to customers physical requirements in mill lengths 10 to 24 ft.	

Mill at Plymouth, Michigan

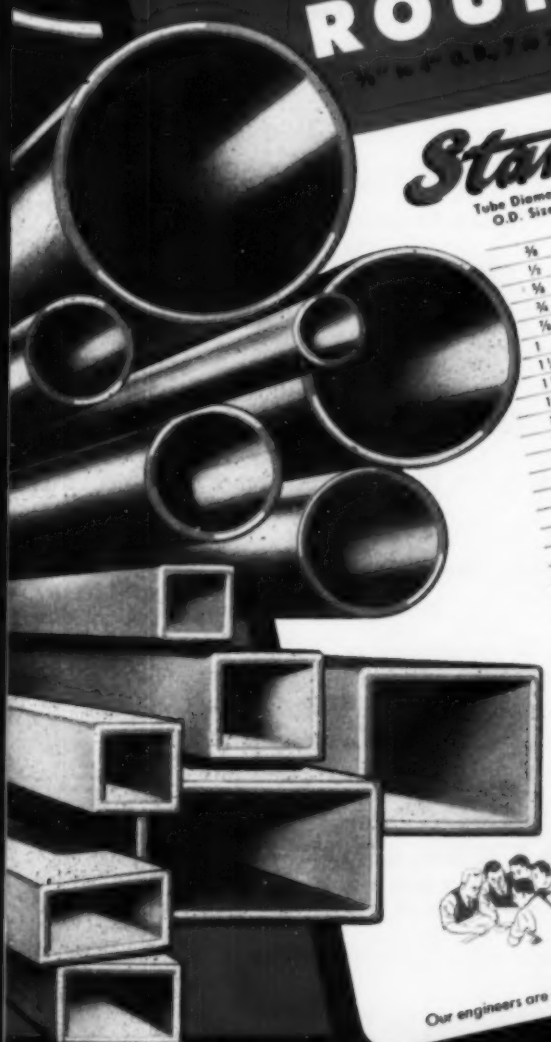
PILGRIM DRAWN STEEL DIVISION

AUTOMOTIVE MATERIALS CORP.
24th FLOOR, FISHER BLDG.
DETROIT 2, MICHIGAN

Michigan WELDED STEEL TUBING

The Modern Electric Resistance Welded Steel Tubing
Straight or Fabricated to your specification

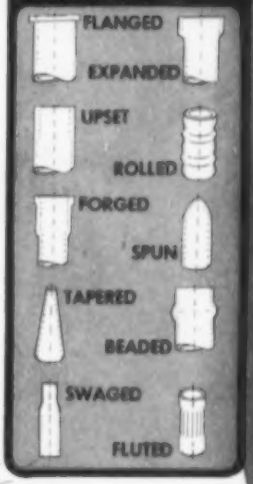
ROUND SQUARE-RECTANGULAR



Standard Sizes

Tube Diameter O.D. Size	Maximum Wall BWG Gauge	Minimum Wall Decimal	BWG Gauge
	16	.022	24
⅜	.065	.022	24
½	.083	.022	24
⅝	.095	.022	24
¾	.095	.028	22
⅞	.095	.028	22
1	.095	.028	22
1 ⅛	.095	.028	22
1 ¼	.095	.035	20
1 ⅜	.095	.035	20
1 ½	.120	.035	20
1 ⅝	.120	.035	20
1 ⅞	.120	.035	20
2	.180	.035	20
2 ⅛	.180	.035	20
2 ¼	.180	.035	20
2 ⅜	.180	.035	20
2 ½	.180	.035	20
2 ¾	.180	.035	20
2 ⅞	.180	.035	20
3	.180	.035	20
3 ⅛	.180	.035	19
3 ¼	.180	.042	19
3 ⅜	.180	.042	19
3 ½	.180	.042	19
3 ⅝	.180	.042	18
3 ¾	.180	.049	18
3 ⅞	.180	.049	18
4	.180	.049	18

Can be BENT also . . .



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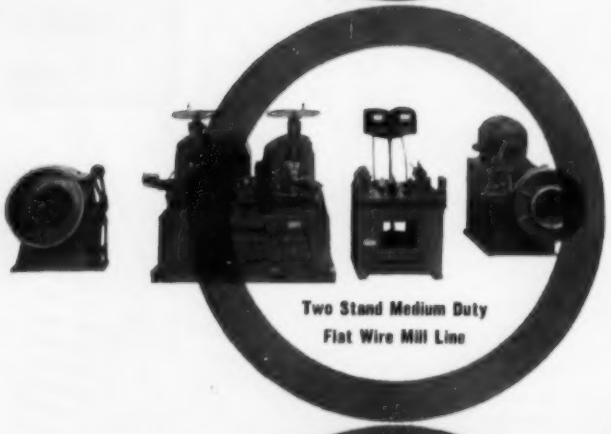
Twelve Roll High Speed Tube and Rod Straightener

which of these machines can you use?

High Speed, Two Stand Heavy Duty Flat Wire Mill Line



Two Stand Medium Duty Flat Wire Mill Line

Standard Slitter, with Outboard Bearings

Modern engineering skill, backed by more than 65 years of manufacturing experience, enables Torrington to design and build auxiliary mill machinery of the highest calibre. Illustrated here are only four of many Torrington machines which can be quickly fitted to your individual needs — to speed your production and reduce your costs. Write or call for full information.

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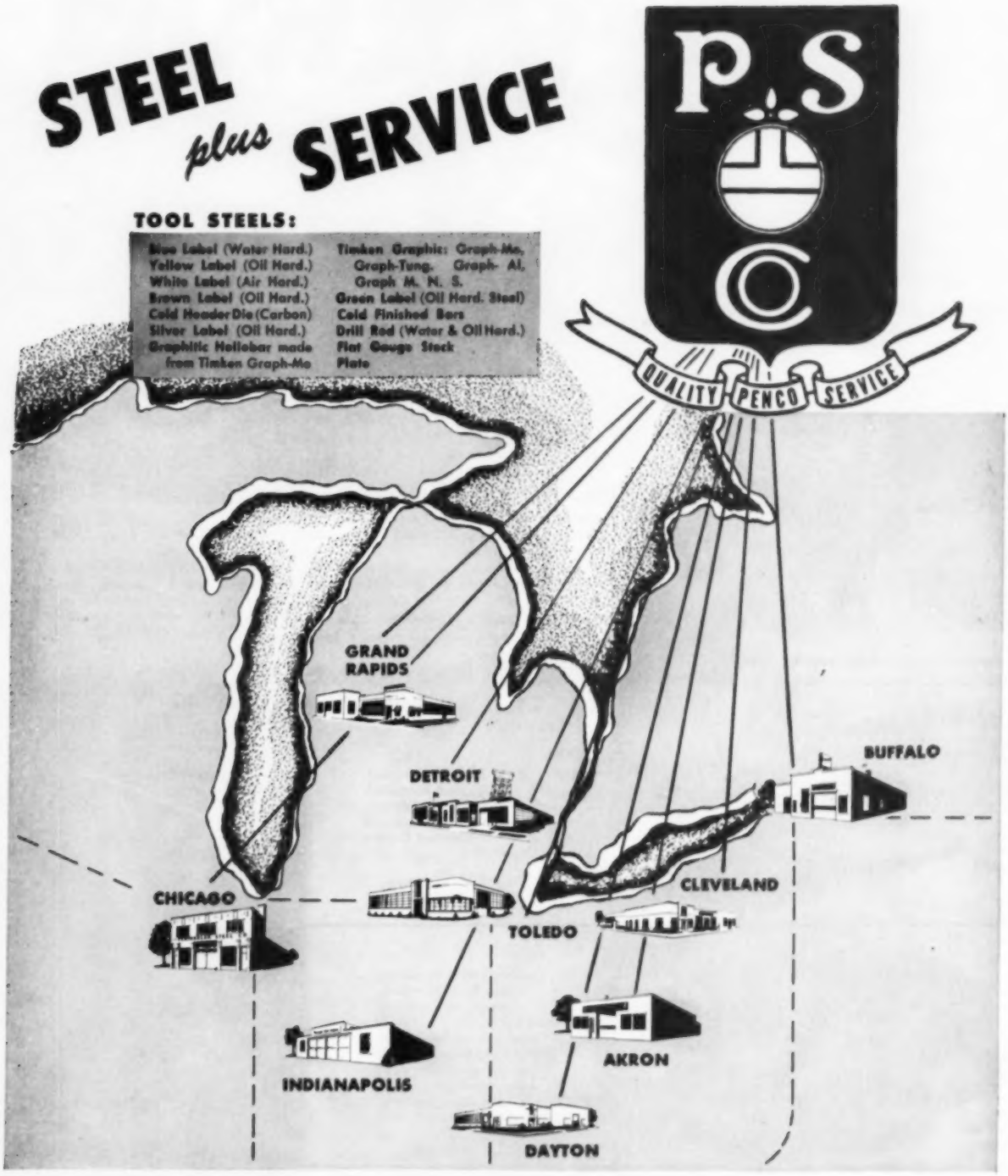
Yellow Label (Oil Hard.)	
White Label (Air Hard.)	
Brown Label (Oil Hard.)	Green Label (Oil Hard. Steel)
Cold Header Die (Carbon)	Cold Finished Bars
Silver Label (Oil Hard.)	Drill Rod (Water & Oil Hard.)
Graphitic Hollobar made from Timken Graph-Mo	Flat Gauge Stock
	Plate



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***Telephone* LOrain 7-8900**

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Finishing Division: Carbon, Alloy and Stainless Hot and Cold Rolled Strip Steel; High Carbon Cold Rolled Spring Steel; Black, Pickled and Coated Strip Steel; Sharon Galvanite; Special Alloy Coated, N.A.X., Cor-Ten Strip Steels, and Sharonart.

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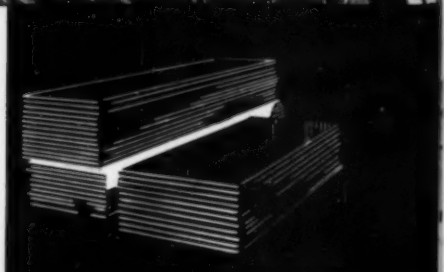
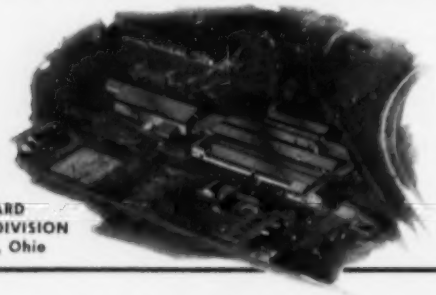
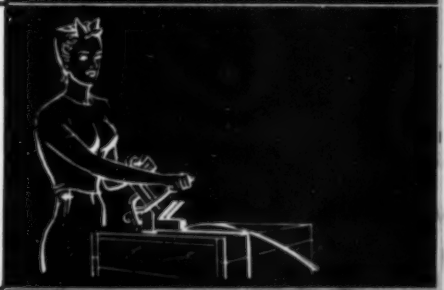




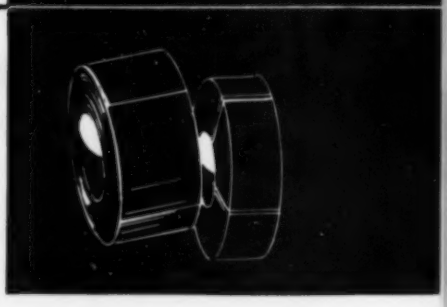
BRAINARD STEEL DIVISION
Warren, Ohio

Tensional Steel Strapping, Heavy Duty Strapping, Strapping Tools and Accessories, Electric Welded Steel Tubing, Tel-O-Posts, Steel Strong Posts, Brite-Lite and Standard Areawalls, Roll-Formed Steel Lintels, Anti-Checking Irons, Brainard Scaffolding.



DETROIT TUBE & STEEL DIVISION
Detroit, Michigan

Cold Rolled Strip Steel

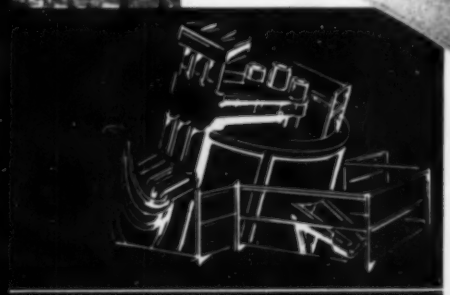


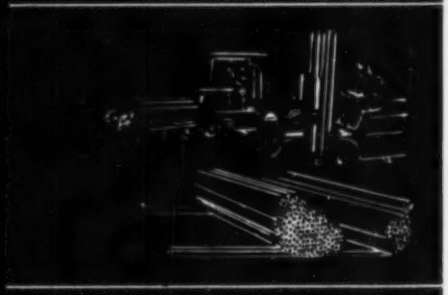
SHARON STEEL CORPORATION

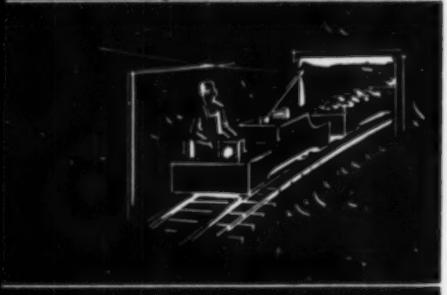
Sharon, Pennsylvania

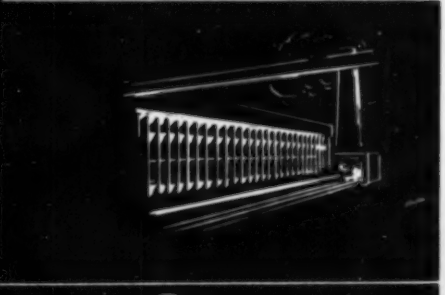
SHARONSTEEL

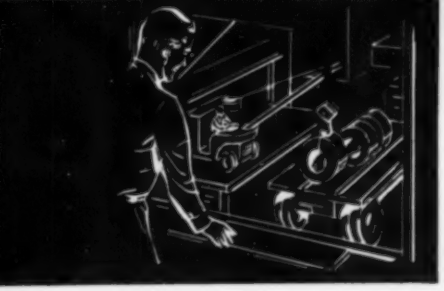
STEEL











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Warehouse Distributors

MALLORY-SHARON TITANIUM CORPORATION
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Sales Offices **Chicago, Cincinnati, Cleveland, Dayton, Detroit, Indianapolis, Los Angeles, Milwaukee, New York, Philadelphia, Rochester, San Francisco, Seattle, Montreal, Que., Toronto, Ont.**

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HOW TO USE IT?

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Tin Plate
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Nails and Spikes
Steam, Gas and Water Pipe
Oil Well Casing and Tubing
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Depend on "YOUNGSTOWN"

DRIVEN SLITTER
Capacity 4 cuts in 67" wide x .375" thick Hot Rolled Strip Steel

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STRIP MILL

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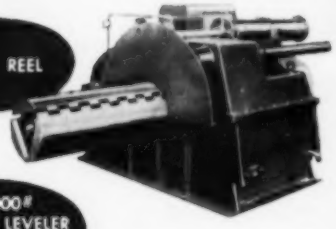
Precision-built and engineered to your needs and specifications



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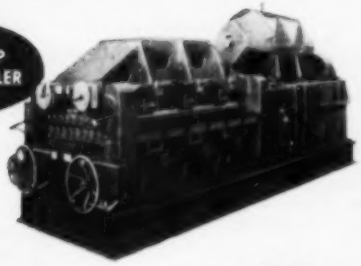
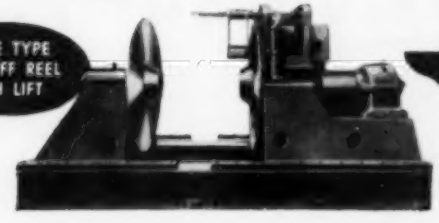
1,000,000# STRETCHER LEVELER
90" x 240" x 1/4" thick



BACKED UP ROLLER LEVELER



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- CONTINUOUS PICKLING LINES
- SHEET SCRUBBER LINES
- ROLLER LEVELERS • STRETCHER LEVELERS
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- PAY OFF REELS • TAKE UP REELS
- UP CUT SHEARS • UP COILERS
- UNCOILERS • COIL CARRIAGES
- UP ENDERS • DOWN ENDERS
- EDGING MILLS • TABLES
- CLASSIFIERS & PILERS
- SCRAP BALERS

Write for Complete Information

The Youngstown Foundry & Machine Co.

SERVING INDUSTRY SINCE 1885

Youngstown, Ohio

17

CHEMICAL USERS' GUIDE To General Chemical Products for the Metal Industries

PRODUCT	AVAILABLE FORMS	COMMERCIAL STRENGTHS	SHIPPING CONTAINERS	APPLICATIONS
Sulfuric Acid H_2SO_4	Liquid	66° Be (93.19%) 99% Oleum, 20-65%	Carboys (except Oleum) Steel Drums Tank Trucks Tank Transports Tank Cars	Pickling and descaling; electroplating; bright dipping; electrolytic polishing; galvanizing; anodizing.
Hydrochloric Acid HCl + water *(Muriatic Acid)*	Liquid	18° Be (27.92%) 20° Be (31.45%) 22° Be (35.21%)	Carboys Tank Trucks Tank Cars	Pickling; electroplating; bright dipping; galvanizing; tinning; etching metals; dissolving metals.
Nitric Acid HNO_3 + water	Liquid	36° Be (52.30%) 38° Be (56.52%) 40° Be (61.38%) 42° Be (67.18%) 95%	Carboys (except 95%) Drums Tank Cars	Pickling; electroplating; bright dipping; oxide finishing; dissolving and stripping metals.
Hydrofluoric Acid HF + water	Liquid	60% 70%	Steel Drums & Tank Cars	Pickling; electroplating; electrolytic polishing; bright dipping.
Sodium Fluoride NaF	White Powder	95% or 97% Light or Dense	Multiwall Paper Bags Fibre Drums	Manufacture of rimmed steel; heat treating; galvanizing; pickling; electroplating.
Sodium Bifluoride $NaHF_2$	White Powder	95% or 97% $NaF \cdot HF$	Fibre Drums	Electroplating.
Trisodium Phosphate $Na_3PO_4 \cdot 12H_2O$ *(TSP)*	Crystal	P_2O_5—18.4%	Multiwall Paper Bags Fibre Drums	Alkali cleaning.
Sodium Metasilicate $Na_2SiO_3 \cdot 5H_2O$	White Granular	98.5%	Multiwall Paper Bags Fibre Drums	Alkali cleaning.
Oxalic Acid $C_2H_2O_4 \cdot 2H_2O$	Colorless Crystals	99.5%	Multiwall Paper Bags Fibre Drums	Oxide finishing; metal cleaning.
Potassium Fluoborate KBF_4	White Powder	97.0%	Fibre Drums	Aluminum and magnesium casting; as a flux and grain refiner for aluminum; for removing magnesium from secondary aluminum alloys.
Sodium Fluoborate $NaBF_4$	White Powder	94.0%	Fibre Drums	
Ammonium Fluoborate NH_4BF_4	White Powder	96.0%	Fibre Drums	Aluminum and magnesium casting; electroplating.
Fluoboric Acid HBF_4 + water	Liquid	42.0%	Rubber Drums	Electroplating; metal cleaning or dipping; electropolishing.
Lead Fluoborate $Pb(BF_4)_2$ + water	Liquid	51.0%	Carboys	Electroplating.
Tin Fluoborate $Sn(BF_4)_2$ + water	Liquid	47.0%	Carboys	Electroplating.
Copper Fluoborate $Cu(BF_4)_2$ + water	Liquid	45.0%	Carboys	Electroplating.
Iron Fluoborate $Fe(BF_4)_2$ + water	Liquid	45.0%	Carboys	Electroplating.
Nickel Fluoborate $Ni(BF_4)_2$ + water	Liquid	42%	Carboys	Electroplating.

The products advertised are commercial chemicals having various uses, some of which may be covered by patents, and the user must accept full responsibility for compliance therewith.

OTHER PRODUCTS: Acetic Acid; Ammonium Thiosulfate Solution; Aqua Ammonia; Barium Fluoride; Chromium Fluoride; Copper Fluoride; Copper Sulfate; Glauber's Salt; Iron Sulfide; Nickel Fluoride; Perchloric Acid; Sodium Bisulfite, Anhydrous; Sodium Silicate; Sodium Sulfite, Anhydrous; Stannous Chloride; Tetrasodium Pyrophosphate; Phosphoric Acid; Sodium Tripolyphosphate.

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

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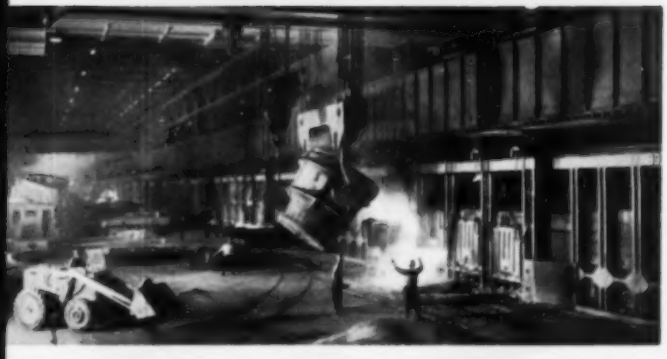
In Wisconsin: General Chemical Company, Inc., Milwaukee, Wis.

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

Allied Chemical

Look to J&L STEEL for . . .

the steels you need . . . as you need them



MODERNIZED PLANTS ASSURE UNIFORMITY OF PRODUCTION

J&L plants and equipment have been expanded and modernized within recent years. Through J&L's new production lines you are assured of consistent conformity with your steel specifications. They provide adequate supplies of modern steels—made to fit your needs.

RESEARCH AND DEVELOPMENT UPHOLD QUALITY

J&L Research and Development extend through every phase of steel-making. They start with raw materials and extend throughout the study of physical and chemical specifications of steel—from blast furnace to finished product. J&L Steels keep pace with your requirements.

STOCK AND SERVICE ARE AT YOUR COMMAND

Whenever you need steel, there are J&L District Sales Offices, Warehouses, and Distributors at hand to give you quick, efficient service . . . deliver your steel *when* you want it—*where* you want it. J&L's service and stocks cover all industrial centers.

J&L STEEL

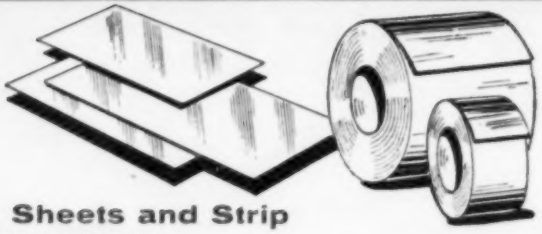
See following pages for list of J&L Carbon Steels

Jones & Laughlin

STEEL CORPORATION — *Pittsburgh*

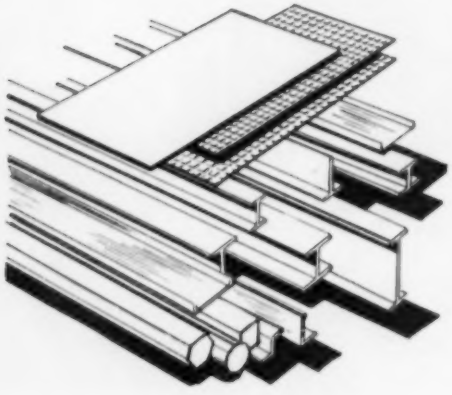
J&L STEEL

CARBON



Sheets and Strip

Hot Rolled Sheets
Hot Rolled Sheets, Pickled and Oiled
Cold Rolled Sheets
Cold Rolled Strip
Cold Rolled Circles
} In Coils or Cut Lengths



Hot Rolled Products

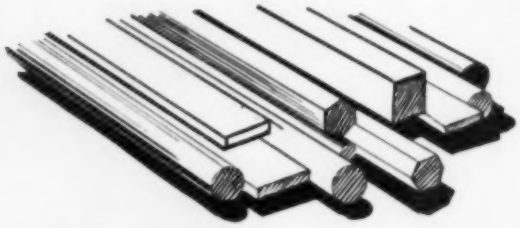
Skelp

Floor Plates—
Jal-Tread and
Junior Jal-Tread
Pattern

Plates

Bars and Small Shapes
Rounds
Squares
Hexagons
Flats
Angles
} In Standard Steel Grades

Special Sections
Die Rolled Sections
Concrete Reinforcing Bars—Straight, Bent, and Fabricated



Cold Finished Products

(Carbon and Alloy Steels, as Drawn, Rolled, Turned, Ground and Furnace Treated)

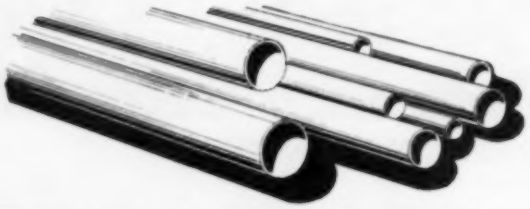
Bars and Shapes
Rounds
Squares
Hexagons
Flats

Cold Drawn special sections—all grades and sizes

Forgings—Turned and Finished

Shafting
Ground and Polished from Cold Drawn Bars
Turned, Ground and Polished
Turned and Polished

Cold Drawn Butt-Welded Tubing



Structural Shapes

Angles
Beams
Channels
Junior Beams
Junior Channels
Junior Tees

Jaltruss Sections

Railroad Track Fasteners
Railroad Spikes

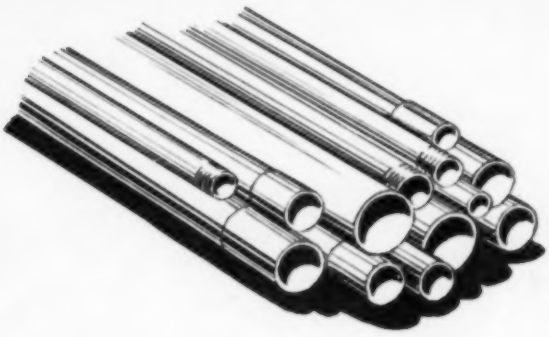
Forgings
Plain Rounds and Squares

Electricweld Tubing Products

Straight Mechanical Tubing
Cold Drawn Mechanical Tubing
Steel Condenser and Heat Exchanger Tubing

Fabricated Tubing
Perma-Tube
Other Special Fabrications

STEELS



Tubular Products

Standard Pipe
Line Pipe
Oil Well Casing
Oil Well Tubing
Drive Pipe
} In Welded and Seamless

Seamless Drill Pipe
Seamless Mechanical Tubing

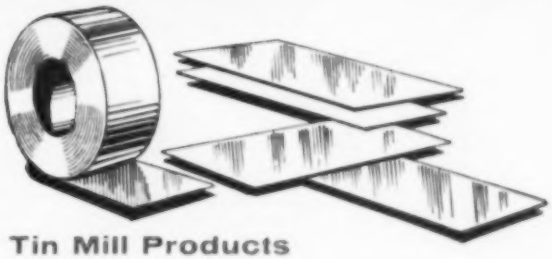
Wire Mill Products

Bright Annealed and Galvanized Wire
Electromatic Oil Tempered Spring Wire
Spring Wire (Hard Drawn)
Woven Wire Fencing
Barbed Wire
Fence Staples
Bright, Coated, Blued and Galvanized Nails

Wire Rope

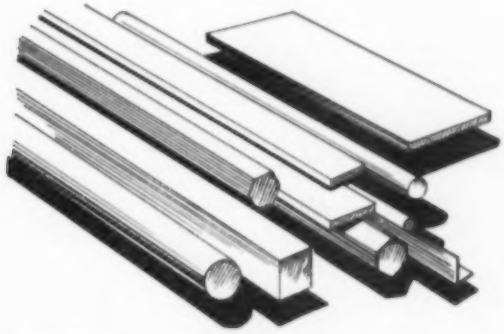
(In full range — both Permaset Preformed and Non-Preformed)

General Purpose
Logging
Material Handling
Excavating
Marine
Oil Country
Mining



Tin Mill Products

Hot Dipped Tin Plate
Electrolytic Tin Plate
Black Plate, Can Making Quality



Special Steel Products

JALTEN

(Low-Alloy High-Strength Steel)

Structurals
Plates
Hot and Cold Rolled Sheets
Bars and Small Shapes
Wire Products

JALLOY

(Special Alloy Steel)

Structurals
Bars and Small Shapes
Heat Treated Plates
Hot and Cold Rolled Sheets and Strip
Wire Products

FAST, EFFICIENT SERVICE

See following page for list of J&L's Steel Warehouses and District Sales Offices.

WHERE TO BUY J&L STEEL CARBON STEELS

DISTRICT SALES OFFICES

Atlanta 1, Georgia
Healy Building

Baltimore 2, Maryland
Mathieson Building

Boston 16, Massachusetts
250 Stuart Street

Buffalo 2, New York
Liberty Bank Building

Chicago 3, Illinois
Field Building

Cincinnati 2, Ohio
Carew Tower

Cleveland 14, Ohio
Union Commerce Building

Columbus 15, Ohio
LeVeque Lincoln Tower

Dallas 1, Texas
Fidelity Union Life Building

Denver 16, Colorado
4975 Colorado Boulevard

Detroit 2, Michigan
Fisher Building

Harrisburg, Pennsylvania
402 Dauphin Building

Houston 2, Texas
Oil and Gas Building

Indianapolis 4, Indiana
Circle Tower Building

Kansas City 15, Kansas
Funston and Chrysler Roads

Los Angeles 58, California
4727 East 48th Street

Louisville 2, Kentucky
Heyburn Building

Memphis 1, Tennessee
1 Auction Avenue

Minneapolis 2, Minnesota
Foshay Tower

New Haven 10, Connecticut
Union Trust Building

New Orleans 6, Louisiana
North Miro and Japonica Streets

New York 17, New York
405 Lexington Avenue

Philadelphia 3, Pennsylvania
Suburban Station Building

Pittsburgh 30, Pennsylvania
3 Gateway Center

St. Louis 3, Missouri
Shell Building

San Francisco 4, California
Russ Building

Washington 6, D.C.
1625 K Street, N.W.

FOREIGN

Toronto, Ontario 1, Canada
Toronto Daily Star Building

Rio de Janeiro, Brazil, S.A.
Caixa Postal 3752

WAREHOUSE DIVISION

Warehouses

*Chicago 9, Illinois
2250 West 47th Street

*Cincinnati 2, Ohio
4400 Carew Tower

Detroit 7, Michigan
3289 Beaufait Avenue

Louisville 8, Kentucky
2525 South Fourth Street

Memphis 1, Tennessee
1 Auction Avenue

Nashville 10, Tennessee
1898 Herron Drive

*New Orleans 6, Louisiana
North Miro and Japonica Streets

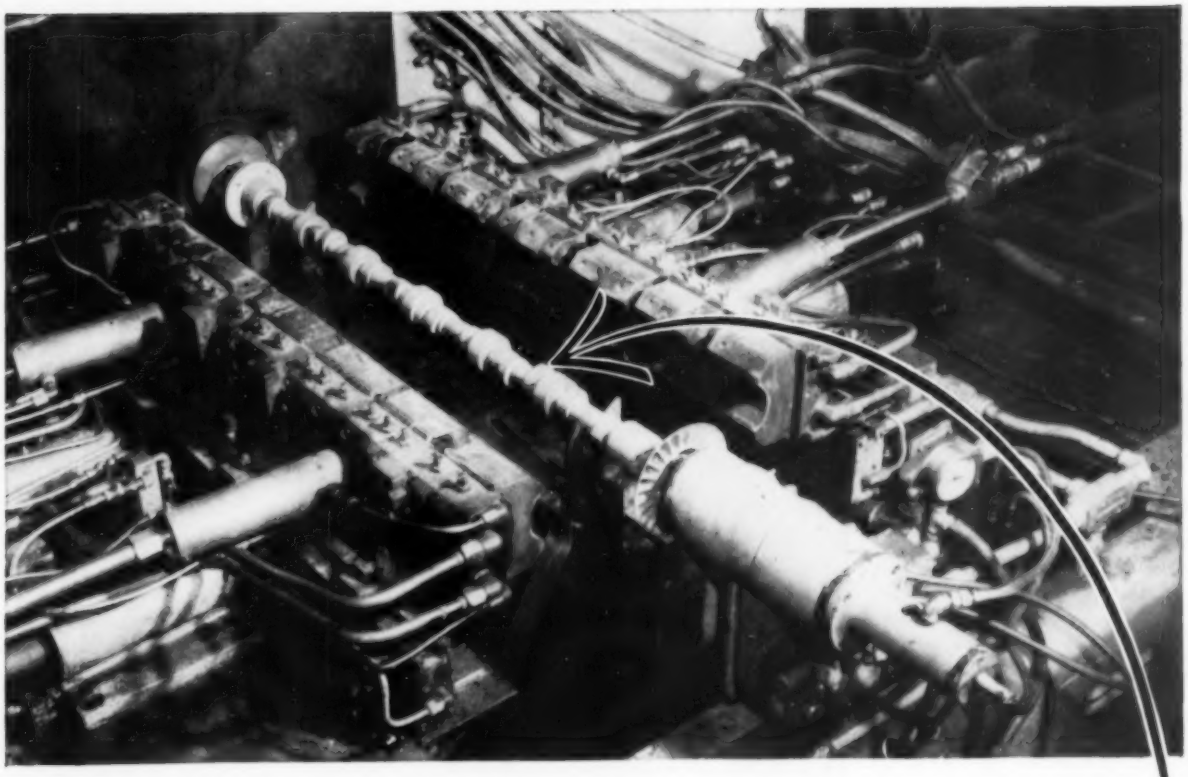
*New York, New York
34-35 Review Avenue
Long Island City 1, N.Y.

Pittsburgh 30, Pennsylvania
26th and Jane Streets

Also Fabricating Operations

Jones & Laughlin
STEEL CORPORATION — *Pittsburgh*

Look to J&L . . . for the steels J&L STEEL *that work for modern industry.*



A cross-section view of this camshaft shows an even, uniform depth of the hardened surface.

Automatic Flame-Hardening Boosts Production 300%

Using an automatic oxy-acetylene flame-hardening machine, a leading manufacturer of trucks and marine equipment increased the production of flame-hardened gears, bearings, and camshafts 300 per cent. Parts are flame-hardened on as many as 22 different surfaces in fast, simple operations.

The flame-hardening process produces wear-resistant surfaces on large and small sections without heating the entire part . . . Distortion is at a minimum, and case depth is easily and accurately controlled. Flame-hardening is fast and relatively simple compared with other methods of hardening metal such as nitriding and carburizing. Low cost, portable flame-hardening equipment is available for the majority of applications.

Your local LINDE representative will be glad to show you how to produce machine parts with a tough, ductile interior and a hard, wear-resistant surface. Start saving now, call him for more information on flame-hardening.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY
Division of Union Carbide Canada Limited, Toronto

Linde
Trade-Mark

"Linde" is a registered trade-mark of Union Carbide and Carbon Corporation.

JOHNSON *Specialty Wires*

Offices and Warehouses

NEW YORK (17)
CHRYSLER BUILDING
Phone: ORegon 9-2440
Teletype: NY 1-2171

PHILADELPHIA (3)
SUBURBAN STATION BLDG.
Phone: Locust 7-7380
Teletype: PH-495

AKRON (10) *Branch Plant*
560 HOGUE AVENUE
Phone: Hemlock 4174
Teletype: AK-35

DETROIT (2)
FISHER BUILDING
Phone: Trinity 1-1300
Teletype: DE-323

PITTSBURGH (30)
GRANT BUILDING
Phone: Grant 1-3600
Teletype: PG-575

CLEVELAND (14)
UNION COMMERCE BLDG.
Phone: Cherry 1-2991
Teletype: CV-351

DAYTON (2)
REALTY BUILDING
Phone: Adams 4161
Teletype: Dayton 181

CHICAGO (8) *Warehouse*
1500 SOUTHWESTERN AVE.
Phone: Monroe 6-3658
Teletype: CG-1419

CHICAGO (4)
District Sales Office
McCORMICK BLDG.
Phone: Wabash 6550
Teletype: CG-1344

LOS ANGELES (59)
Plant and Warehouse
11642 MONA BLVD.
Phone: Loraine 6-0194
Teletype: LA-334

LOS ANGELES (17)
District Sales Office
STATLER CENTER
Phone: Madison 1456
Teletype: LA-725

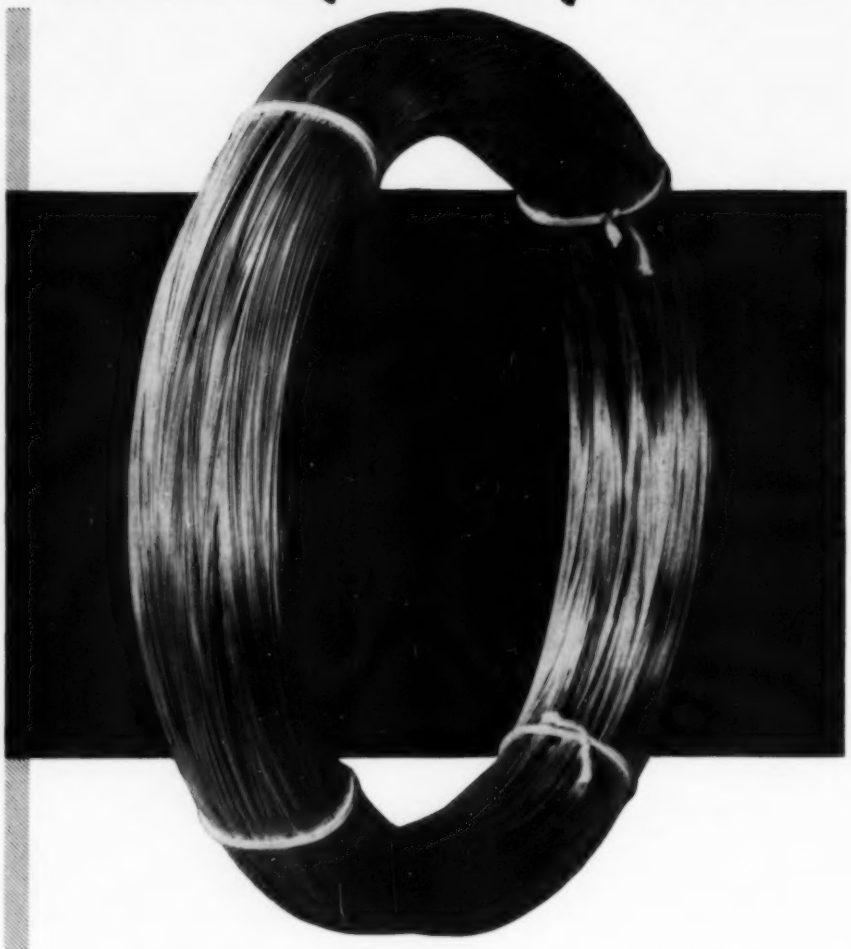
HOUSTON (2)
SECOND NATIONAL BANK BLDG.
Phone: Blackstone 6635
Teletype: HO-372

TULSA (3)
PHILTOWER BUILDING
Phone: Tulsa 24396
Teletype: TU-97

ATLANTA
1725 PEACHTREE ST., NORTHWEST
Phone: Cypress 5858
Teletype: AT-570

In Canada

TORONTO 2B, ONTARIO
BOHNE INDUSTRIES, LTD.
1149-53 Queen Street West
Phone: Lakeside 4418



Aircraft Cord Wire • Bobby Pin Wire — Flat, Half Round, Round • Brush Wires — Round or Flat, Tempered and Untempered • Card Wire • Flexible Shaft Wire • Hose Reinforcement Wire • Mechanical Hose Wire • Metal Stitching Wire • Music Spring Wire • Rope Wire • Stapling Wire • Tempered and Untempered MB Spring Wires • Tire Bead Wire • Vacuum and Defroster Hose Wire • Tempered and Untempered Flat or Shaped Wire. Other High Carbon Specialty Wires.

FINISHES: Bright • Liquor Finish • Copper Coated • Bronze Plated • Galvanized • Tinned Coated • Alloy Coated.

Coils • Spools • Spoolless Cores • Straightened and Cut.

JOHNSON STEEL AND WIRE COMPANY, INC.
WORCESTER 1, MASS.
A Subsidiary of Pittsburgh Steel Company

DISTRICT SALES OFFICES

DETROIT, 2
5-162 General Motors Building

BOSTON, 16
916 Statler Office Building

CHICAGO, 1
2128 Builders Building

CINCINNATI, 2
2606-7 Carew Tower

CLEVELAND, 14
1140 Leader Building

HOUSTON, 1
750 Lockwood Drive

INDIANAPOLIS, 4
1010 Chamber of
Commerce Building

NEW YORK, 17
Chrysler Building

LOS ANGELES

FOREIGN REPRESENTATION
Principal cities throughout the world

PHILADELPHIA, 3
1462 Suburban
Station Building

ROCHESTER, 14
925 Genessee
Valley Trust Building

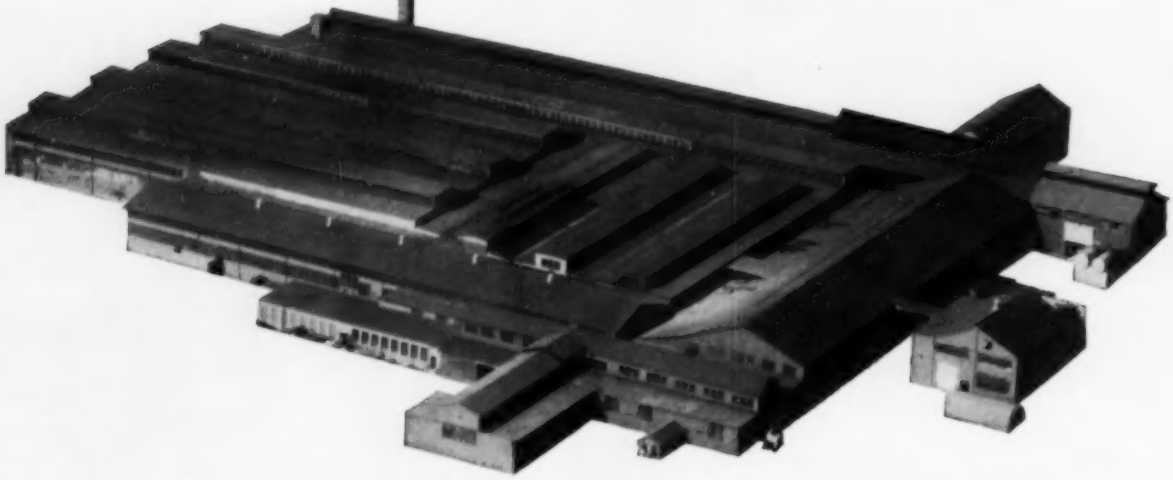
SAN FRANCISCO, 5
511 Standard Oil
Building

ST. LOUIS, 1
1240-46 Paul Brown Building

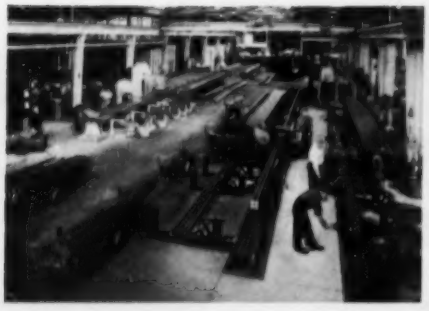
This Plant is Geared for

special service on your

BAR and TUBING Problems



These Products are Made to Your Specifications



Columbia COLD FINISHED STEEL BARS

Cold Drawn Rounds • Cold Drawn Squares
Cold Drawn Hexagons
Ground and Polished Bars • Turned and Polished Bars
Turned, Ground and Polished Bars • Cold Drawn Flats
Cold Drawn Alloys • Special Shapes

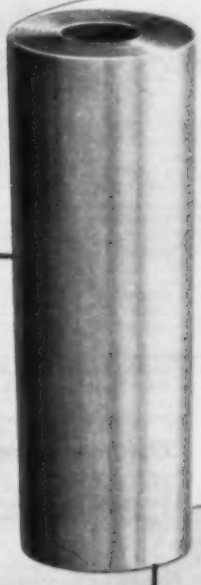
Summerill COLD DRAWN SEAMLESS STEEL TUBING

Mechanical Tubing
Pressure Tubing • Condenser Tubing
Hydraulic Tubing
Diesel Engine Tubing • Aircraft Tubing • Special Shapes

Columbia STEEL & SHAFTING CO.

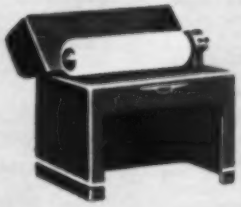
PITTSBURGH 30, PA.

DISTRICT OFFICES: Hartford • Philadelphia • Buffalo • York • Pittsburgh • Cleveland • Dayton • Milwaukee • Chicago



YOUR PRODUCTS ARE OUR BUSINESS, TOO!

Autos, appliances, transportation or farm equipment . . . if your products require flat-rolled steel, they deserve the best. And it's our obligation to see that you get the very best that 25 years' specialization in flat-rolled steel can provide.



GREAT LAKES STEEL CORPORATION

Ecorse, Detroit 29, Mich.

Sales offices in New York, Chicago, Cleveland, Grand Rapids, Indianapolis, Lansing, Philadelphia.

A UNIT OF

NATIONAL STEEL CORPORATION

ELECTROMET

TRADE-MARK

ALLOYS FOR THE STEEL, IRON, AND NON-FERROUS INDUSTRIES

PRODUCT*	NOMINAL COMPOSITION	USES
BORON ALLOYS		
Ferroboron		
Min. 10.00% Boron Grade	Aluminum ...max. 0.50% Carbon .....max. 1.50%	Increases hardenability of steel; also, for additions to malleable iron and aluminum alloys.
Min. 17.50% Boron Grade	Aluminum ...max. 0.50% Carbon .....max. 0.50%	
Manganese-Boron	Boron .....min. 17.50% Manganese ..approx. 75% Carbon .....max. 3% Iron .....max. 5%	Used to cleanse and deoxidize non-ferrous alloys.
CALCIUM ALLOYS		
Calcium-Silicon	Calcium .....30 to 33% Silicon .....60 to 65% Iron .....1.50 to 3%	Deoxidizer for quality ingot steel. Also used in high-tensile gray irons.
Calcium-Manganese-Silicon	Calcium .....16 to 20% Manganese ...14 to 18% Silicon .....53 to 59%	A complex deoxidizer used widely in production of steel castings.
Calcium Metal		
Regular Grade	Calcium .....98% Balance largely Calcium Chloride	Reducing agent in metallurgical applications, deoxidizer and degasifier for non-ferrous metals.
Distilled Grade	Calcium..approx. 99.50% Balance largely Magnesium	For special applications requiring calcium of very high purity.
CHROMIUM ALLOYS		
"Simplex" Low-Carbon Ferrochrome	Chromium ....63 to 66% Silicon .....5 to 7% Carbon ....max. 0.010% or 0.025%	For producing stainless steel, particularly the low-carbon grades. The silicon in the alloy reduces metal oxides from the slag back into the bath. Rapid solubility of the alloy saves furnace time.
2% Nitrogen-Bearing Grade	Chromium ....62 to 65% Silicon .....5 to 7% Nitrogen .....2 to 2.5% Carbon ....max. 0.025%	
5% Nitrogen-Bearing Grade	Chromium ....60 to 63% Silicon .....5 to 7% Nitrogen .....5 to 6% Carbon ....max. 0.025%	
Low-Carbon Ferrochrome (Other Grades)	Chromium ....67 to 71% Silicon ...0.30 to 1.00% Carbon (10 Grades) max. 0.02 to max. 2.00%	Production of stainless steels and high-temperature alloys requiring low carbon content.
High-Carbon Ferrochrome		
Max. 4.50, 5.00, or 6.00% Carbon Grade	Chromium ....67 to 70% Silicon .....1 to 2%	For production of engineering alloy steels and other alloy steels of moderate chromium content.
Max. 7.00% Carbon Grade	Chromium ....66 to 69% Silicon .....1 to 3%	
Min. 7.00% Carbon Grade	Chromium ....65 to 68% Silicon .....1 to 3%	
56 to 62% Chromium Grade	Carbon ....max. 5 or 6% Silicon ...max. 3.5 or 4%	
Nitrogen-Bearing Low-Carbon Ferrochrome	Chromium ....65 to 70% Silicon ...0.30 to 1.00% Carbon .....max. 0.10% Nitrogen ..0.75 to 2.00%	For additions of nitrogen to improve properties of high-chromium steels.
"SM" Ferrochrome	Chromium ....60 to 65% Silicon .....4 to 6% Carbon .....4 to 6% Manganese ....4 to 6%	A high-solubility chromium addition for steel or iron in either furnace or ladle.
Exothermic Ferrochrome	Chromium ..approx. 60% Carbon .....max. 4.5%	These improved exothermic ladle alloys have high solubility, low carbon pickup, and high ignition temperature.
Exothermic Silicon-Chrome	Chromium ..approx. 46% Silicon .....approx. 23% Carbon .....max. 1.00%	
Foundry Ferrochrome		
High-Carbon Grade	Chromium ....62 to 66% Silicon .....7 to 10% Carbon .....5 to 7%	Developed especially for high-solubility ladle additions of chromium to improve composition and properties of cast iron.
Low-Carbon Grade	Chromium ....50 to 54% Silicon .....28 to 32% Carbon .....max. 1.25%	

PRODUCT*	NOMINAL COMPOSITION	USES
CHROMIUM ALLOYS cont.		
Chromium Metal		
Low-Carbon Grade	Chromium .....min. 97% Carbon .....max. 0.10% Iron .....max. 1%	Production of wide variety of non-ferrous chromium-bearing alloys, including electrical resistance alloys and high-temperature alloys.
Nitrogen-Bearing Grade	Above grade with Nitrogen approx. 0.75% or higher.	
High-Carbon Grade	Chromium ....87 to 90% Carbon .....9 to 11% Iron .....max. 1.25%	
Electrolytic Chromium		
Laboratory Grade	Chromium ..min. 99.20% Iron .....max. 0.03%	
Commercial Grade	Chromium ..min. 99.00% Iron .....max. 0.30%	
"EM" Ferrochrome-Silicon	Chromium ....39 to 41% Silicon .....42 to 46% Carbon .....max. 0.05%	Used in production of stainless steel to reduce metal oxides from the slag back into bath.
"EM" Ferrosilicon-Chrome	Chromium ....50 to 54% Silicon .....28 to 32% Carbon .....max. 1.25%	For adding chromium and silicon to steels containing up to 1 or 2 per cent chromium.
"EM" Chromium Briquets (Hexagonal Shape)	Chromium .....2 lb. Total Weight .....3⅛ lb.	For adding chromium to cast iron in the cupola.
COLUMBIUM ALLOYS		
Ferrocolumbium	Columbium ...50 to 60% Silicon .....max. 8% Carbon .....max. 0.40%	Stabilizer in austenitic chromium-nickel stainless steels. Also constituent of high-temperature alloys.
Ferrotantalum-Columbium	Columbium ..approx. 40% Tantalum ...approx. 20% Cb + Ta .....min. 60% Silicon .....5 to 7% Carbon .....max. 0.30%	Used to supplement ferrocolumbium in chromium-nickel stainless steels and high-temperature alloys.
MANGANESE ALLOYS		
Standard Ferromanganese		
Regular Grade	Manganese ...74 to 76% Carbon .....approx. 7% Silicon .....max. 1%	Most common means of adding manganese to steel for both alloying and deoxidizing purposes. Also for counteracting sulphur in steel and cast iron.
Low-Phosphorus Grade	Manganese ...78 to 80% Carbon .....max. 7% Silicon .....max. 2% Phosphorus ..max. 0.10%	
Low-Carbon Ferromanganese	Manganese ....min. 90% Carbon .....max. 0.07%	Additions of manganese to steels of low-carbon specification, particularly stainless steels of 18 per cent chromium, 8 per cent nickel type.
Low-Phosphorus Grade	Phosphorus ..max. 0.06%	
Regular Grades	Manganese ...85 to 90% Carbon ..max. 0.07, 0.10, 0.15, 0.30 or 0.50%	
Regular Grade (High-Silicon)	Manganese ...80 to 85% Carbon .....max. 0.75% Silicon .....5 to 7%	
"Mansilloy" Alloy	Manganese ...60 to 63% Silicon .....28 to 31% Carbon .....max. 0.07% Phosphorus ..max. 0.05%	Used in production of stainless steels to reduce metal oxides from the slag back into the bath.
Silicomanganese		
Max. 1.50% Carbon Grade	Manganese ...65 to 68% Silicon .....18 to 20%	A versatile alloy useful as furnace block, deoxidizer, and also for making manganese additions to steel in the ladle or in the furnace.
Max. 2.00% Carbon Grade	Manganese ...65 to 68% Silicon ....15 to 17.50%	
Max. 3.00% Carbon Grade	Manganese ...65 to 68% Silicon ....12 to 14.50%	
Medium-Carbon Ferromanganese	Manganese ...80 to 85% Carbon ...1.25 to 1.50% Silicon.max. 1.00 to 1.50%	For making low- and medium-carbon manganese steel and Hadfield steel.

*All of the alloys and metals listed are produced in the usual lump, crushed, or ground sizes, except where other special forms are indicated.

PRODUCT*	NOMINAL COMPOSITION	USES
MANGANESE ALLOYS cont.		
Low-Iron Ferromanganese	Manganese ...85 to 90% Carbon ...approx. 7.00% Silicon .....max. 3% Iron .....max. 2%	For high manganese additions to certain non-ferrous alloys, particularly aluminum.
Manganese Metal	Manganese .min. 95.50% Carbon .....max. 0.20% Silicon .....max. 1.00% Iron .....max. 2.50%	Used both as deoxidizer and alloy in production of numerous non-ferrous metals and alloys.
"EM" Silico-manganese Briquets (Square Shape)	Manganese .....2 lb. Silicon .....½ lb. Total Weight .....3½ lb.	For adding manganese (with silicon) to cast iron in the cupola.
"EM" Ferro-manganese Briquets (Oblong Shape)	Manganese .....2 lb. Total Weight .....3 lb.	For adding manganese (without silicon) to cast iron in the cupola.
SILICON ALLOYS		
50% Ferrosilicon		
Regular Grade	Silicon .....47 to 51%	Deoxidizer for most grades of killed or semi-killed steel. Blocking grade specially sized for maximum efficiency.
Blocking Grade	Silicon .....47 to 51%	
Boron-Bearing Grade	Silicon .....47 to 51% Boron ..0.035 to 0.045%	
Low-Aluminum Grade	Silicon .....47 to 51% Aluminum ...max. 0.40% or 0.10%	
65% Ferrosilicon		
Regular Grade	Silicon .....65 to 70%	For furnace or ladle addition to steels.
Low-Impurity Grade	Silicon ..61.50 to 66.50% Aluminum ...max. 0.50% Total Impurities max. 1.00%	Mainly for production of electrical sheet steel.
75% Ferrosilicon		
Regular Grade	Silicon .....73 to 78%	Deoxidizer and alloy for production of high-silicon spring and electrical sheet steel. Graphitizing inoculant for cast iron.
Low-Aluminum Grade	Silicon .....73 to 78% Aluminum ...max. 0.50%	
85% Ferrosilicon		
Regular Grade	Silicon .....83 to 88%	Enables melter to add higher percentages of silicon without chilling metal in ladle. Graphitizing inoculant for cast iron.
Calcium-Bearing Grade	Silicon .....83 to 88% Calcium ....min. 0.50%	
Low-Aluminum Grade	Silicon .....83 to 88% Aluminum ...max. 0.50%	
90% Ferrosilicon		
Regular Grade	Silicon .....92 to 95%	Permits large additions of silicon without harmful chilling effect.
Low-Aluminum Grade	Silicon .....92 to 95% Aluminum ...max. 0.50%	
Silicon Metal		
Regular Grade	Silicon ...min. 97 or 96% Iron .....max. 1 or 2%	Additions of silicon to non-ferrous metals, particularly aluminum and copper.
Purified Grade	Silicon ..99.70 to 99.90% Iron .....005 to .015%	For applications in non-ferrous industry requiring silicon of high purity.
Low-Calcium Grade	Silicon .....min. 97% Iron .....max. 1% Calcium .....max. 0.10%	For high-silicon aluminum alloys where calcium is detrimental.
Low-Aluminum Grade	Silicon .....min. 98% Iron .....max. 1% Aluminum ...max. 0.10%	For the production of silicon-copper alloys where aluminum is detrimental.
"SMZ" Alloy	Silicon .....60 to 65% Manganese ....5 to 7% Zirconium .....5 to 7%	Particularly strong graphitizing inoculant used in cast iron.
"EM" Silicon Briquets		
Large Size (Cylindrical or Brick-Shape)	Silicon .....2 lb. Total Weight .....5 lb.	For adding silicon to cast iron in the cupola.
Small Size (Cylindrical Shape)	Silicon .....1 lb. Total Weight .....2½ lb.	

PRODUCT*	NOMINAL COMPOSITION	USES
SILICON ALLOYS cont.		
Magnesium-Ferrosilicon		
Regular Grade	Silicon .....43 to 47% Magnesium ..7.5 to 9.5%	For addition to cast iron and steel to obtain special properties.
Cerium-Bearing Grade	Cerium ...approx. 0.50%	
TITANIUM ALLOYS		
Ferrotitanium	Titanium .....27 to 32% Carbon .....max. 0.10%	For stabilized stainless steels and high-temperature metals.
Silicon-Titanium	Titanium .....40 to 50% Silicon .....45 to 50% Iron .....max. 3%	For additions of titanium to steels or non-ferrous alloys.
Manganese-Nickel-Titanium	Titanium .....43 to 48% Nickel .....approx. 25% Manganese ....max. 8%	Deoxidization of nickel alloys.
TUNGSTEN ALLOYS		
Ferrotungsten	Conforming to A.S.T.M. Spec. A 144-50	Production of tool and die steels; also high-temperature alloys.
Tungsten Metal Powder		
Melting Grade	Tungsten ...min. 98.80% Total Carbon..max. 0.25%	Production of tungsten steels and cast tungsten carbide.
Calcium Tungstate	Tungstic Oxide..68 to 72%	For making tungsten chemicals and other tungsten products.
Calcium Tungstate Nuggets	Tungstic Oxide..68 to 72%	Making tool steels and high-temperature alloys.
Ammonium Paratungstate	Tungstic Oxide..min. 88.7%	Intermediate for tungsten products.
VANADIUM ALLOYS		
Ferrovanadium	Vanadium ....50 to 55% or 70 to 75% Carbon ..max. 0.20, 0.50, or 3.00% Silicon ..max. 1.50, 2.00, or 8%; and approx. 10%	Production of tool and engineering steels, high-strength structural steels, non-aging rimming steels, and wear-resistant irons.
Vanadium Oxide Fused	V_2O_5 .....86 to 89% Na_2O .....approx. 10% CaO .....approx. 2%	For addition of vanadium to steel and for manufacturing catalysts.
Sodium Polyvanadate (Red Cake)	V_2O_5 .....approx. 85% Na_2O .....approx. 9%	
High-Purity	V_2O_5 ....approx. 99.50%	For manufacture of vanadium compounds, including vanadium catalysts.
Ammonium Metavanadate	NH_4VO_3 .....min. 99%	
ZIRCONIUM ALLOYS		
12 to 15% Zirconium Alloy	Zirconium ....12 to 15% Silicon .....39 to 43% Carbon .....max. 0.20%	A powerful deoxidizer. Also increases depth of hardening.
35 to 40% Zirconium Alloy	Zirconium ....35 to 40% Silicon .....47 to 52% Carbon .....max. 0.50%	Deoxidizer for fine grades of alloy steels.
"EM" Zirconium Briquets (Cylindrical Shape, Reddish Color)	Zirconium .....0.55 lb. Silicon .....1.90 lb. Total Weight .....5 lb.	For adding zirconium and silicon to cast iron in the cupola.

"Electromet," "EM," "Monsilay," "Simplex," "SM," and "SMZ," are trade-marks of Union Carbide and Carbon Corporation.

IF YOU HAVE A METALS PROBLEM

More than 50 different alloys and metals are produced by ELECTROMET. If you need help in selecting the proper alloys, be sure to consult one of ELECTROMET'S specially trained metallurgists and engineers. Address your inquiries to one of the offices listed at right.

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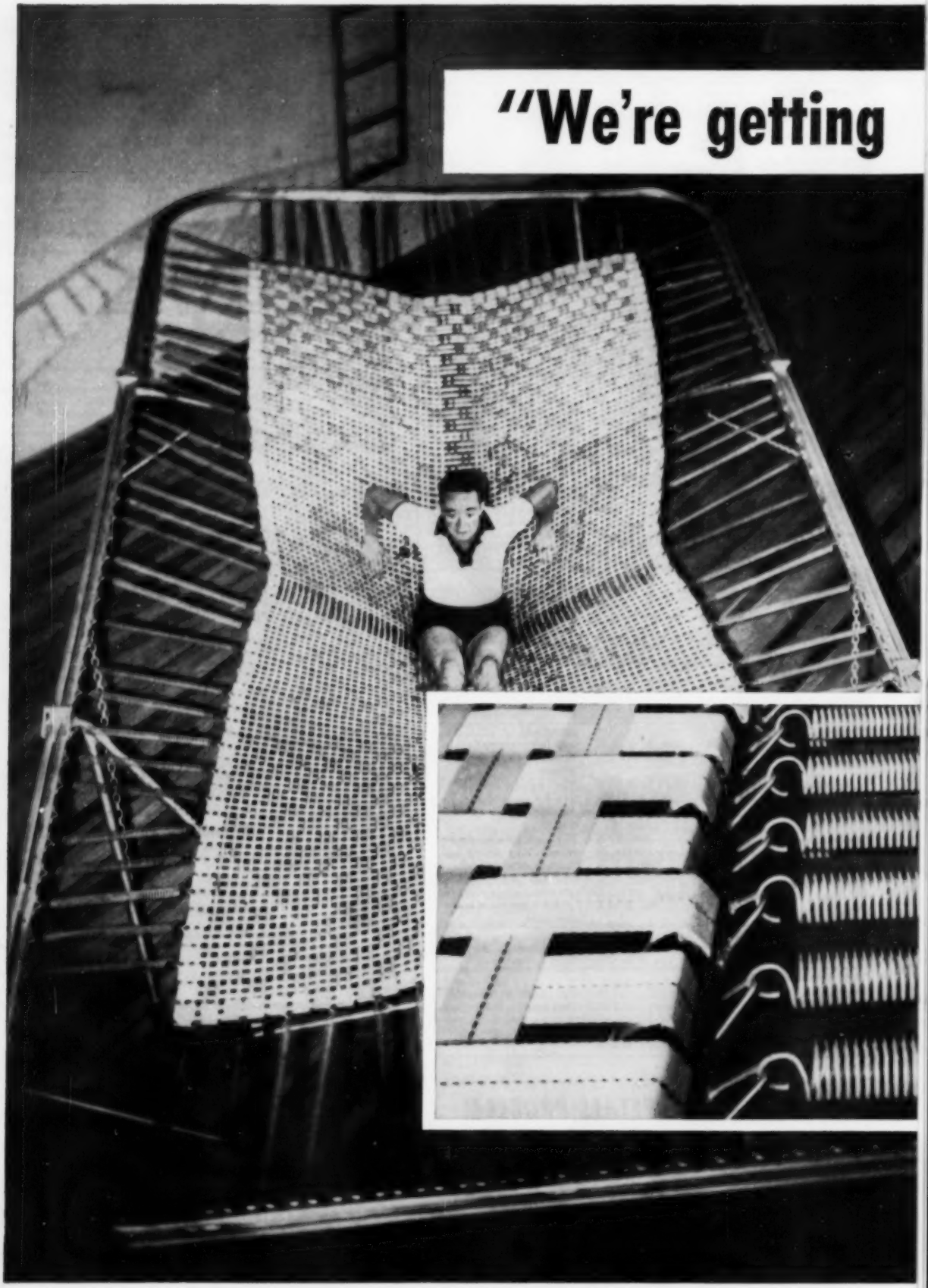
Chicago 1, Ill.....230 N. Michigan Avenue
Cleveland 14, Ohio.....Union Commerce Building
Detroit 2, Mich.....6-240 General Motors Building
Houston 11, Texas.....6119 Harrisburg Boulevard
Los Angeles 58, Calif.....2770 Leonis Boulevard
New York 17, N.Y.....30 East 42nd Street
Pittsburgh 22, Pa.....Oliver Building
San Francisco 6, Calif.....22 Battery Street
In Canada: Electro Metallurgical Company, Division of Union Carbide Canada Limited, Welland, Ontario

ELECTRO METALLURGICAL COMPANY A Division of Union Carbide and Carbon Corporation
30 East 42nd Street New York 17, N.Y.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As the National Intercollegiate Tumbling Champion from 1935 to 1937, Mr. Nissen built the Trampoline into a breathtaking national sport—it was accepted in 1948 for competition by the National AAU.

Each Nissen Trampoline contains 120 American Quality Springs, 8" long, 1⅛" in diameter. The mat has to "give" three feet, and there is only 3½ inches clearance when the mat is bottomed. For this reason, the springs must have exactly the right deflection.

Concerning safety, Mr. Nissen says this: "We used to have spring breakage before using American Quality Springs. It was dangerous because the spring could rebound and seriously injure someone standing nearby. Since we switched to American Quality Springs, we've never had a customer complaint, and the springs last twice as long as before."

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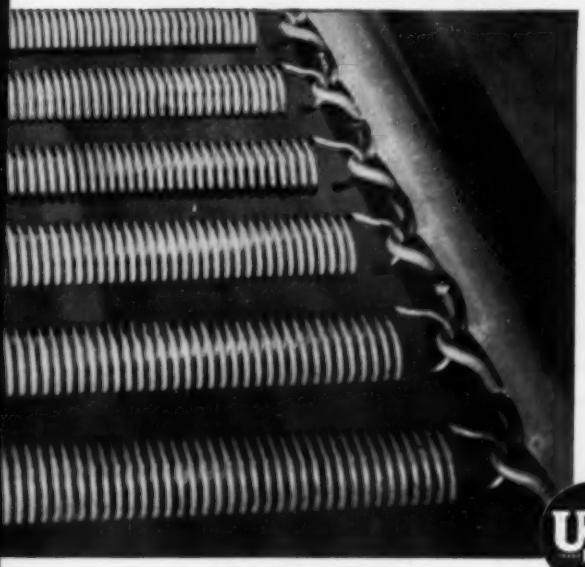

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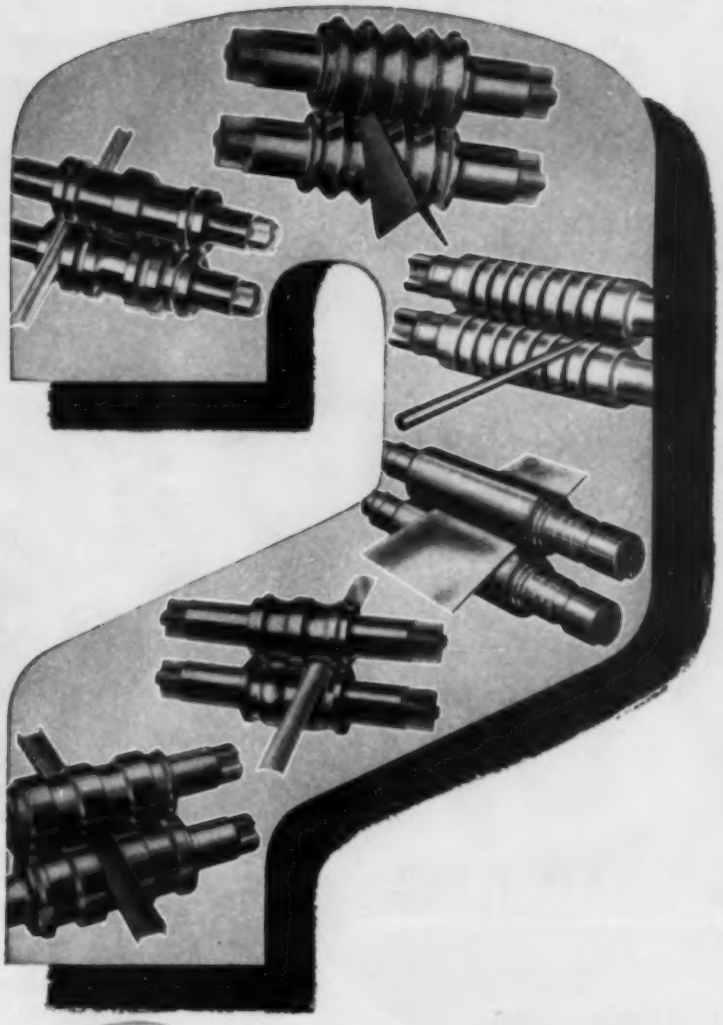

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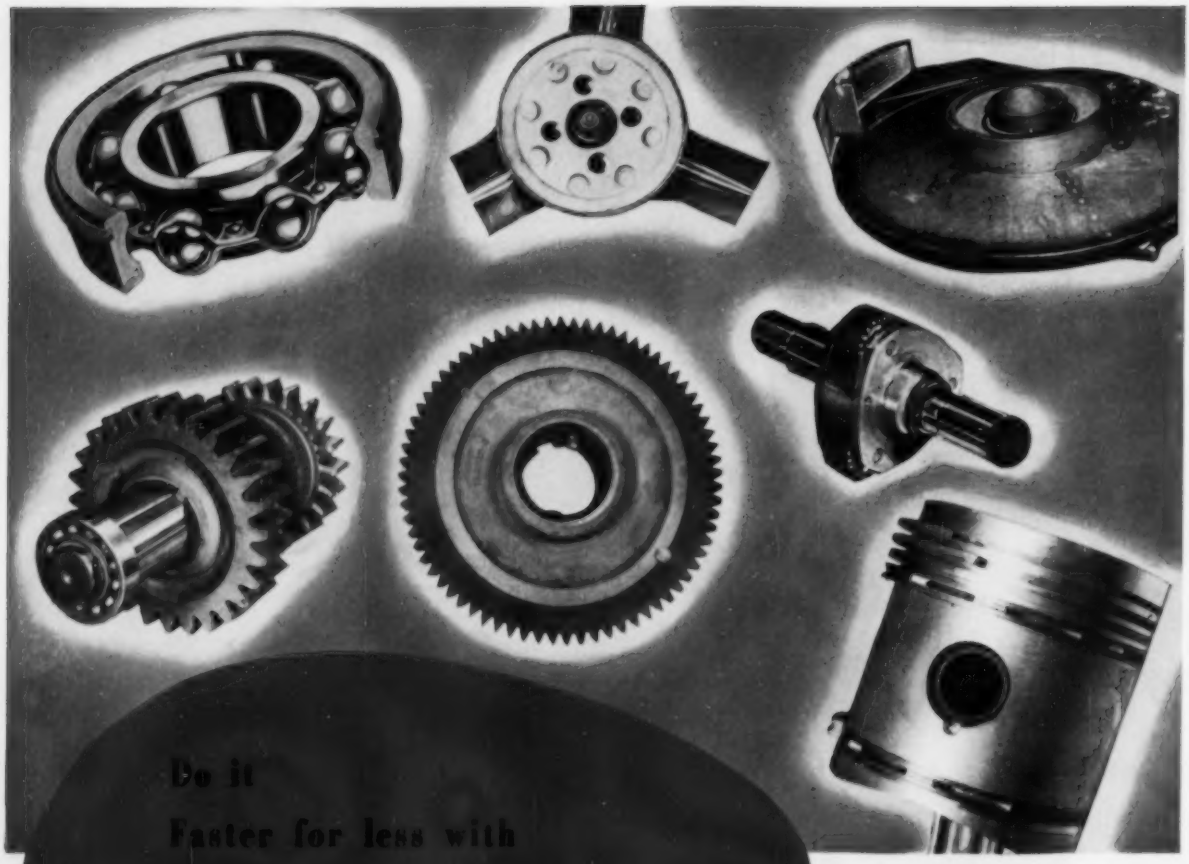

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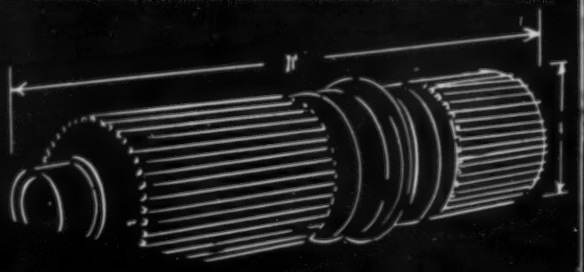

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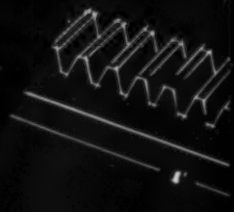

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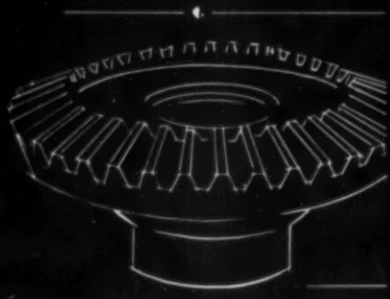

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AND HOME OFFICE ADDRESSES

A

A1 Acme Steel Co.
Riverdale Station, Chicago 27, Ill.

A3 Alan Wood Steel Co., Conshohocken, Pa.

A4 Allegheny Ludlum Steel Corp.
Oliver Bldg., Pittsburgh 22, Pa.

A6 American Shim Steel Co.
New Kensington, Pa.

A7 American Steel & Wire Division
U. S. Steel Corp.
Rockefeller Bldg., Cleveland 13, O.

A9 Angell Nail & Chaplet Co.
4580 East 71st St., Cleveland 5, O.

A10 Armco Steel Corp., Middletown, O.

A11 Atlantic Steel Co.
P. O. Box 1714, Atlanta 1, Ga.

A12 Atlantic Wire Co.
1 Church St., Branford, Conn.

A14 Athenia Steel Division
National Standard Co., Clifton, N. J.

A17 W. Ames & Co., Jersey City 4, N. J.

A21 Atlas Tack Corp.
Pleasant St., Fairhaven, Mass.

A22 American Tack Co. Inc.
175 Fifth Ave., New York, N. Y.

A23 Avon Tube Division
Higbie Mfg. Co., Rochester, Mich.

B

B1 Babcock & Wilcox Co.
Tubular Products Division
Beaver Falls, Pa.

B2 Bethlehem Steel Co., Bethlehem, Pa.

B3 Bethlehem Pacific Coast Steel Corp.
20th and Illinois Sts.,
San Francisco 19, Calif.

B4 Blair Strip Steel Co.
1209 Butler Ave., New Castle, Pa.

B5 Bliss & Laughlin Inc., Harvey, Ill.

B9 Brainard Steel Division
Sharon Steel Corp., Warren, O.

B11 Buffalo Bolt Co. Division
Buffalo-Eclipse Corp.
North Tonawanda, N. Y.

B12 Buffalo Steel Division
H. K. Porter Co. Inc.
Tonawanda, N. Y.

B13 Bundy Tubing Co.
8109 E. Jefferson Ave.,
Detroit 14, Mich.

B14 A. M. Byers Co., Pittsburgh, Pa.

C

C1 Calstrip Steel Corp.
7140 Bandini Blvd.
Los Angeles 22, Calif.

C2 Calumet Steel Division,
Borg-Warner Corp.
310 S. Michigan Ave., Chicago, Ill.

C5 Central Iron & Steel Co.
Subsidiary of Barium Steel Corp.
25 Broad St.
New York, N. Y.

C6 Chicago Steel & Wire Co.
10257 Torrence Ave., Chicago 17, Ill.

C7 Cleveland Cold Rolling Mills Co.
6813 Stroud Rd., Cleveland 30, O.

C8 Cold Metal Products Co., Youngstown 1, O.

C10 Colorado Fuel and Iron Corp.
Continental Oil Bldg., Denver 2, Colo.

C11 Columbia-Geneva Steel Division
U. S. Steel Corp., Russ Bldg.
San Francisco 6, Calif.

C12 Columbia Steel & Shafting Co.
P. O. Box 1557, Pittsburgh 30, Pa.

C15 Connors Steel Division
H. K. Porter Co. Inc.
Birmingham, Ala.

C16 Continental Steel Corp., Kokomo, Ind.

C17 Copperweld Steel Co., Warren, O.

C18 Crucible Steel Co. of America
Oliver Bldg., Pittsburgh 30, Pa.

C19 Cumberland Steel Co., Cumberland, Md.

C20 Cuyahoga Steel & Wire Co.
Newburg P. O. Box 1770
Cleveland 5, O.

C22 Claymont Steel Products Department
Colorado Fuel & Iron Corp.
Claymont, Del.

C23 Charter Wire Products, Sterling, Ill.

C25 Central Steel Tube Co., Clinton, Iowa

C26 Cedarburg Wire, Wire Nail Co.
Cedarburg, Ozaukee County, Wis.

C30 Crescent Brass & Pin Co.
5766 Trumbull Ave., Detroit 8, Mich.

D

D1 K. H. Davis Wire & Cable Corp.
2226 Santa Fe Ave.,
Los Angeles 58, Calif.

D2 Detroit Steel Corp.
P. O. Box 4308 Porter Station
Detroit 9, Mich.

D3 Detroit Tube & Steel Division
Sharon Steel Corp.
Box 4438, Joyfield Station
Detroit 28, Mich.

D4 Henry Disston & Sons Inc.
Tacony, Philadelphia 35, Pa.

D5 Driscoll Wire Co., Shelton, Conn.

E

E5 Elliott Bros. Steel Co., New Castle, Pa.

E6 Empire Steel Corp., Mansfield, O.

E8 Electroweld Steel Corp.
515 W. Foothill Blvd., Azusa, Calif.

F

F3 Fitzsimons Steel Co., Youngstown 1, O.

F4 Follansbee Steel Corp., Follansbee, W. Va.

F5 Franklin Steel Division,
Borg-Warner Corp.
Franklin, Venango County, Pa.

F6 Fretz-Moon Tube Co. Inc., Butler, Pa.

F7 Ft. Howard Steel & Wire Division
Research Parts & Engineering Corp.
State and Ninth Sts., Green Bay, Wis.

F9 A. Finkl & Sons Co.
2011 Southport Ave., Chicago 14, Ill.

F10 Formed Tubes Inc., Sturgis, Mich.

G

G3 Globe Steel Tubes Co.,
3839 W. Burnham St., Milwaukee, Wis.

G4 Granite City Steel Co., Granite City, Ill.

G5 Great Lakes Steel Corp. Division
National Steel Corp.
Ecorse, Detroit 29, Mich.

G6 Greer Steel Co., Dover, O.

G7 Griffin Mfg. Co.
Cherry & Huron Sts., Erie 6, Pa.

G8 Green River Steel Corp., Owensboro, Ky.

H

H6 Hind Steel Co. Inc.
2146 Stanley Terrace, Union, N. J.

H8 Hofmann Industries Inc.
Sinking Spring, Pa.

H9 Hillwood Mfg. Co.
21700 St. Clair Ave., Cleveland 17, O.

H10 Handy Button Machine Co.
2235 S. Rockwell St., Chicago 8, Ill.

I

I-1 Igoe Brothers Inc.
Ave. A & Polnier St.
Newark 5, N. J.

I-2 Inland Steel Co.
38 S. Dearborn St., Chicago 3, Ill.

I-7 Indiana Steel & Wire Co., Muncie, Ind.

J

J4 Johnson Steel & Wire Co. Inc.
53 Wiser Ave., Worcester 1, Mass.

J5 Jones & Laughlin Steel Corp.
3 Gateway Center, Pittsburgh 30, Pa.

J7 Judson Steel Corp., Emeryville 8, Calif.

J8 Jersey Shore Steel Co., Jersey Shore, Pa.

K

K1 Kaiser Steel Corp.
285—17th St., Oakland 12, Calif.

K3 Keystone Drawn Steel Co.
Spring City, Pa.

K4 Keystone Steel & Wire Co.
Peoria 7, Ill.

K5 Kidd Drawn Steel Co., Aliquippa, Pa.

K6 Knoxville Iron Co., Knoxville 2, Tenn.

K7 Kenmore Metals Corp.
9th St., Jersey City, N. J.

L

L1 Laclede Steel Co.
Arcade Bldg., St. Louis 1, Mo.

L2 La Salle Steel Co.
P. O. Box 6800-A, Chicago 80, Ill.

L5 Lockhart Iron & Steel Co.
P. O. Box 1165, Pittsburgh 30, Pa.

L6 Lone Star Steel Co.
W. Mockingbird Lane, at Roper
Dallas, Tex.

L7 Lukens Steel Co., Coatesville, Pa.

M

M1 McLouth Steel Corp., Detroit, Mich.

M2 Macwhyte Co., Kenosha, Wis.

M5 Medart Co.
3535 Dekalb St., St. Louis 18, Mo.

M7 Michigan Seamless Tube Co.
South Lyon, Mich.

M8 Mid-States Steel & Wire Co.
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Crawfordsville, Ind.

(Continued Next Page)

Key To Producing Companies

M9 Midvale Co.
Nicetown, Philadelphia 40, Pa.

M11 Missouri Rolling Mill Corp.
6800 Manchester Ave.
St. Louis 10, Mo.

M12 Moltrup Steel Products Co.
Beaver Falls, Pa.

M13 Monarch Steel Co. Inc.
141—141st St., Hammond, Ind.

M14 McInnes Steel Co., Corry, Pa.

M15 Clayton Mark & Co.
1900 Dempster St., Evanston, Ill.

M16 Maryland Fine & Specialty Wire Co. Inc.
Cockeysville, Md.

M17 Metal Forming Corp., Elkhart, Ind.

M18 Milton Steel Products Division
Merritt-Chapman & Scott Corp.
Milton, Pa.

M19 Marshall Steel Co.
P. O. Box 108, La Grange, Ill.

M20 Michigan Steel Tube Products Co.
9450 Buffalo St., Detroit 12, Mich.

N

N2 National Supply Co.
Spang-Chalfant Division
Pittsburgh 30, Pa.

N3 National Tube Division, U. S. Steel Corp.
525 William Penn Place
Pittsburgh, Pa.

N5 Nelsen Steel & Wire Co.
9400 Belmont Ave., Franklin Park, Ill.

N6 New England High Carbon Wire Co.
50 Howe Ave., Millbury, Mass.

N8 Newman-Crosby Steel Co.
Pawtucket, R. I.

N9 Newport Steel Corp., Newport, Ky.

N11 Nikoh Tube Co.,
5000 S. Whipple St., Chicago 32, Ill.

N12 Niles Rolling Mill Division
Sharon Steel Corp., Niles, O.

N13 Northern Steel Inc.
1 State St., Boston 9, Mass.

N15 Northwestern Steel & Wire Co.
Sterling, Ill.

N16 New Delphos Mfg. Co., Delphos, O.

O

O2 Ohio Seamless Tube Division
Copperweld Steel Co., Shelby, O.

O4 Oregon Steel Mills
5200 N. W. Front Ave.,
Portland 10, Oreg.

P

P1 Pacific States Steel Corp.
Latham Square Bldg.
Oakland 12, Calif.

P2 Pacific Tube Co.
5710 Smithway St.
Los Angeles 22, Calif.

P4 Phoenix Iron & Steel Co.
Subsidiary of Barium Steel Corp.
25 Broad St., New York, N. Y.

P5 Pilgrim Drawn Steel Division
Automotive Materials Corp.
2406 Fisher Bldg., Detroit 2, Mich.

P7 Pittsburgh Steel Co., Pittsburgh 30, Pa.

P9 Pittsburgh Tube Co.
212 Wood St., Pittsburgh 22, Pa.

P13 Precision Drawn Steel Co.
3600 River Rd., Camden, N. J.

P16 Page Steel & Wire Division
American Chain & Cable Co. Inc.
Monessen, Pa.

P17 Plymouth Steel Corp.
6134 Epworth Blvd., Detroit 10, Mich.

P18 George W. Prentiss & Co.
439 Dwight St., Holyoke, Mass.

P21 Philadelphia Nail & Wire Co. Inc.
S. E. Cor. 61st & Vine Sts.
Philadelphia 39, Pa.

P22 Phoenix Mfg. Co., Joliet, Ill.

R

R1 Reeves Steel & Mfg. Co., Dover, O.

R2 Republic Steel Corp.
Republic Bldg., Cleveland 1, O.

R5 John A. Roebling's Sons Corp.
Subsidiary of Colorado Fuel & Iron Corp., Trenton 2, N. J.

R6 Rome Strip Steel Co. Inc.
530 Henry St., Rome, N. Y.

R7 Rotary Electric Steel Co.
Box 4606, Detroit 34, Mich.

R8 Reliance Division, Eaton Mfg. Co.
Massillon, O.

R9 Rome Mfg. Division
Revere Copper & Brass Inc.
230 Park Ave., New York 17, N. Y.

R10 Rodney Metals Inc.
261 Fifth Ave., New York 16, N. Y.

R11 M. M. Rhodes & Sons Co.
30 Porter St., Taunton, Mass.

S

S1 Seneca Wire & Mfg. Co.
Fostoria, O.

S2 Service Steel Division, Van Pelt Corp.
P. O. Box 532, Detroit 32, Mich.

S3 Sharon Steel Corp., Sharon, Pa.

S4 Sharon Tube Co.
249 N. Water Ave., Sharon, Pa.

S5 Sheffield Steel Corp.
Kansas City 25, Mo.

S14 Standard Tube Co.
24400 Plymouth Rd., Detroit 28, Mich.

S15 Stanley Works, Bridgeport 7, Conn.

S17 Superior Drawn Steel Co., Monaca, Pa.

S18 Superior Steel Corp., Carnegie, Pa.

S19 Sweet's Steel Co., Williamsport, Pa.

S22 Summerill Tubing Co. Division
Columbia Steel & Shafting Co.
P. O. Box 1557, Pittsburgh 30, Pa.

S23 Superior Tube Co., Norristown, Pa.

S26 Specialty Wire Co. Inc.
110 Grove St., Worcester 5, Mass.

S27 Standard Horse Nail Corp.
1943 Sheers St., New Brighton, Pa.

S28 Southeastern Metals Co.
P. O. Box 5465
North Birmingham 7, Ala.

S29 Sherman Steel & Wire Co.
1300 Pacific St., Sherman, Tex.

S30 Sierra Drawn Steel Corp.
5821 Randolph St.
Los Angeles 22, Calif.

S31 Sawhill Tubular Products Inc.
Sharon, Pa.

S32 Snell-Jones Tack Corp.
70 Brookside Ave., Brockton 69, Mass.

T

T2 Tennessee Coal & Iron Division
U. S. Steel Corp., Fairfield, Ala.

T6 Thompson Wire Co.
41 Mildred Ave., Boston 26, Mass.

T7 Timken Steel & Tube Division
Timken Roller Bearing Co.
Canton 6, O.

T8 Toledo Steel Tube Co., Toledo 6, O.

T10 Tredegar Co., Richmond, Va.

T12 Tube Reducing Corp.,
520 Main Ave., Wallington, N. J.

T14 Townsend Co., New Brighton, Pa.

T15 Tower Mfg. Co.
200 Commerce, Madison, Ind.

T16 Tremont Nail Co., Wareham, Mass.

U

U3 Union Wire Rope Corp.
21st and Manchester Ave.
Kansas City 26, Mo.

U5 U. S. Steel Corp.
525 William Penn Place
Pittsburgh 30, Pa.

U10 U. S. Tube & Foundry Co. Inc.
Wortman Ave. & Essex St.
Brooklyn 8, N. Y.

V

V4 Van Huffel Tube Corp., Warren, O.

W

W1 Wallace Barnes Co. Division
Associated Spring Corp., Bristol, Conn.

W2 Wallingford Steel Co., Wallingford, Conn.

W3 Washburn Wire Co.
118th St. & Harlem River
New York 35, N. Y.

W5 Webb Wire Division
Carpenter Steel Co.
17 Liberty St., New Brunswick, N. J.

W6 Weirton Steel Co. Division
National Steel Corp., Weirton, W. Va.

W7 W. Va. Steel & Mfg. Co.
Huntington, W. Va.

W8 Western Automatic Machine Screw Co.
Elyria, O.

W9 Wheatland Tube Co.
13000 Bankers Securities Bldg.
Philadelphia 7, Pa.

W10 Wheeling Steel Corp., Wheeling, W. Va.

W11 Wickwire Brothers Inc.
Cortland, N. Y.

W12 Wickwire Spencer Steel Division
Colorado Fuel & Iron Corp.
361 Delaware Ave., Buffalo 2, N. Y.

W13 Wilson Steel & Wire Co.
4840 S. Western Ave., Chicago 9, Ill.

W14 Wisconsin Steel Division
International Harvester Co.
180 N. Michigan Ave., Chicago 1, Ill.

W18 Wyckoff Steel Co.
P. O. Drawer 1256, Pittsburgh 30, Pa.

W19 Worcester Pressed Steel Co.
100 Barber Ave., Worcester 6, Mass.

W20 Worcester Wire Works Division
National Standard Co.
70 James St., Worcester, Mass.

W21 Wolverine Tube Division
Calumet & Hecla Inc.
1850 Guardian Bldg., Detroit 26, Mich.

Y

Y1 Youngstown Sheet & Tube Co.
Youngstown 1, O.

Y2 W. J. Young Machinery Co. Inc.
416 Union St., Lynn, Mass.

SHEETS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Hot-Rolled (carbon) Coils

Thickness (inches)	Max. Width (inches)	Mill Point, Producer
.025–.2299	22	Riverdale,Ill. A1
.0389–.0448	32	IndianaHarbor,Ind. I-2
.0449–.0567	12	Sharon,Pa. S3
.0449–.0567	36	Indiana Harbor,Ind. I-2
.0449–.0567	42	SparrowsPoint,Md. B2
.0478–.2299	43	Fontana,Calif. K1
.048–.2299	30	Warren,O. R2
.0568–.0635	56½	Ecorse,Mich. G5
.0568–.0635	60	Pittsburgh J5
.0568–.0660	36	Youngstown U5
.0568–.0709	16	Sharon,Pa. S3
.0568–.0709	40	Fairfield,Ala. T2
.0568–.0709	45	IndianaHarbor,Ind. Y1
.0568–.0709	48	Cleveland J5
.0568–.0709	48	Lackawanna,N.Y. B2
.0568–.0709	48	SparrowsPoint,Md. B2
.0568–.0709	49	Geneva,Utah C11
.0568–.0709	49	Pittsburg,Calif. C11
.0568–.0709	60	Gary,Ind. U5
.0568–.0709	61	Dravosburg,Pa. U5
.0568–.0821	48	Steubenville,O. W10
.0568–.0971	48	IndianaHarbor,Ind. I-2
.0568–.187	60	Allenport,Pa. P7
.057–.097	36	Newport,Ky. N9
.059–.187	26	Conshohocken,Pa. A3
.059–.229	17½	Detroit M1
.059–.229	42	Trenton,Mich. M1
.0598–.0709	58	Cleveland R2
.0598–.2299	50	Fontana,Calif. K1
.060–.0709	61	Fairless,Pa. U5
.062–.071	37	Weirton,W.Va. W6
.062–.2299	36	Warren,O. R2
.0636–.0709	62½	Ecorse,Mich. G5
.0636–.0709	66	Pittsburgh J5
.0661–.2299	38	Youngstown U5
.0710–.0821	18	Sharon,Pa. S3
.0710–.0821	48	GraniteCity,Ill. G4
.0710–.0821	54	Geneva,Utah C11
.0710–.0821	54	Pittsburg,Calif. C11
.0710–.0821	54	SparrowsPoint,Md. B2
.0710–.0821	60	Cleveland J5
.0710–.0821	66	Gary,Ind. U5
.0710–.0821	67	Dravosburg,Pa. U5
.0710–.0821	68½	Ecorse,Mich. G5
.0710–.0821	76	Pittsburgh J5
.0710–.0896	67	Fairless,Pa. U5
.0710–.0896	70	Cleveland R2
.0710–.0971	42	Fairfield,Ala. T2
.0710–.0971	60	Lackawanna,N.Y. B2
.0710–.1875	48	IndianaHarbor,Ind. Y1
.072–.082	40	Weirton,W.Va. W6
.0747–.1799	60	Fontana,Calif. K1
.0747–.1875	48	Portsmouth,O. D2
.080–.188	31⅝	Youngstown R2
.0822–.0971	28½	Mansfield,O. E6
.0822–.0971	50	Steubenville,O. W10
.0822–.0971	54	GraniteCity,Ill. G4
.0822–.0971	66	Cleveland J5
.0822–.0971	78½	Ecorse,Mich. G5
.0822–.0971	84	Pittsburgh J5
.0822–.1718	60	Pittsburg,Calif. C11
.0822–.1799	72	Gary,Ind. U5
.0822–.1799	73	Dravosburg,Pa. U5
.0822–.1868	60	Geneva,Utah C11
.0822–.1875	60	SparrowsPoint,Md. B2
.0822–.2017	22	Sharon,Pa. S3
.0822–.2299	72	IndianaHarbor,Ind. I-2
.083–.094	42	Weirton,W.Va. W6
.0897–.1799	72	Fairless,Pa. U5
.090–.2299	42	Midland,Pa. C18
.095–.134	44	Weirton,W.Va. W6
.0972–.1120	34½	Mansfield,O. E6
.0972–.1120	43	Fairfield,Ala. T2
.0972–.1120	86	Ecorse,Mich. G5
.0972–.1120	54	Steubenville,O. W10
.0972–.1270	72	IndianaHarbor,Ind. I-2
.0972–.1569	72	GraniteCity,Ill. G4
.0972–.1718	60	Lackawanna,N.Y. B2
.0972–.1875	72	Cleveland J5
.0972–.2299	72	Pittsburgh J5
.0972–.2299	90	Newport,Ky. N9
.098–.111	42	Youngstown R2
.100–.188	34⅛	Cleveland R2
.1046–.1195	87	Fontana,Calif. K1
.1046–.1799	72	Fontana,Calif. K1
.1046–.2299	16½	Economy,Pa. B14
.1046–.250	26	Newport,Ky. N9
.112–.229	48	Ecorse,Mich. G5
.1121–.1799	89½	Fairfield,Ala. T2
.1121–.1868	44	Mansfield,O. E6
.1121–.2465	42	Cleveland R2
.1196–.1799	90	Youngstown R2
.125–.188	37⅞	Weirton,W.Va. W6
.135–.156	36	Youngstown R2
.150–.188	42	Weirton,W.Va. W6
.157–.175	21½	Weirton,W.Va. W6
.175–.200	19	Dravosburg,Pa. U5
.180–.1870	49	Ecorse,Mich. G5
.180–.1875	48	Fairless,Pa. U5
.180–.1880	49	Cleveland R2
.180–.2299	48	Gary,Ind. U5
.180–.2299	48	Geneva,Utah C11
.1875	48	GraniteCity,Ill. G4
.1875	48	Weirton,W.Va. W6
.200–.229	15	Ashland,Ky. A10
Check with mill for sizes		

Hot-Rolled (carbon) Cut Lengths

Thickness (inches)	Max. Width (inches)	Mill Point, Producer
.011–.015	36	Newport,Ky. N9
.0113–.0127	36	Kokomo,Ind. C16
.0142–.0156	36	Kokomo,Ind. C16
.0142–.0194	36	Niles,O. N12
.016–.022	42	Newport,Ky. N9
.0172–.0194	36	Kokomo,Ind. C16
.0172–.0194	40	Mansfield,O. E6
.0195–.0448	48	Niles,O. N12
.0225–.0254	48	Kokomo,Ind. C16
.0225–.0388	42	Mansfield,O. E6
.023–.229	48	Newport,Ky. N9
.025–.2299	22	Riverdale,Ill. A1
.0284–.0821	48	Kokomo,Ind. C16
.0344–.0448	36	Torrance,Calif. C11
.0389–.0448	33	IndianaHarbor,Ind. I-2
.0449–.0567	12	Sharon,Pa. S3
.0449–.0567	36	IndianaHarbor,Ind. I-2
.0449–.0567	38⅞	Fairfield,Ala. T2
.0449–.0567	42	SparrowsPoint,Md. B2
.0449–.0709	40	Torrance,Calif. C11
.0449–.0821	48	Mansfield,O. E6
.0478–.0567	48	Dravosburg,Pa. U5
.0478–.0567	48	Gary,Ind. U5
.0478–.0597	48	Fairless,Pa. U5
.0478–.0660	37¼	Youngstown U5
.0478–.2299	43	Fontana,Calif. K1
.048–.2299	36	Warren,O. R2
.0568–.0635	36	Niles,O. N12
.0568–.0635	48	Gadsden,Ala. R2
.0568–.0635	56½	Ecorse,Mich. G5
.0568–.0635	60	Pittsburgh J5
.0568–.0709	16	Sharon,Pa. S3
.0568–.0709	40	Fairfield,Ala. T2
.0568–.0709	45	IndianaHarbor,Ind. Y1
.0568–.0709	48	Cleveland J5
.0568–.0709	48	Lackawanna,N.Y. B2
.0568–.0709	48	SparrowsPoint,Md. B2
.0568–.0709	49	Geneva,Utah C11
.0568–.0709	56	Ashland,Ky. A10
.0568–.0709	60	Gary,Ind. U5
.0568–.0709	60	IndianaHarbor,Ind. I-2
.0568–.0709	60	Youngstown Y1
.0568–.0709	61	Dravosburg,Pa. U5
.0568–.0821	48	Steubenville,O. W10
.0568–.1419	48	Pittsburg,Calif. C11
.0568–.187	60	Allenport,Pa. P7
.059–.187	26	Conshohocken,Pa. A3
.059–.229	42	Detroit M1
.059–.229	42	Trenton,Mich. M1
.0598–.0709	60	Fairless,Pa. U5
.0598–.103	76	Cleveland R2
.0598–.2299	50	Fontana,Calif. K1
.062–.071	37	Weirton,W.Va. W6
.0636–.0709	62½	Ecorse,Mich. G5
.0636–.0709	66	Pittsburgh J5
.0661–.2299	38	Youngstown U5
.0710–.0821	18	Sharon,Pa. S3
.0710–.0821	36	Torrance,Calif. C11
.0710–.0821	48	Gadsden,Ala. R2
.0710–.0821	48	GraniteCity,Ill. G4
.0710–.0821	54	Geneva,Utah C11
.0710–.0821	54	SparrowsPoint,Md. B2
.0710–.0821	60	Cleveland J5
.0710–.0821	65	Ashland,Ky. A10
.0710–.0821	66	Gary,Ind. U5
.0710–.0821	66	IndianaHarbor,Ind. I-2
.0710–.0821	66	Youngstown Y1
.0710–.0821	67	Dravosburg,Pa. U5
.0710–.0821	68½	Ecorse,Mich. G5
.0710–.0821	76	Pittsburgh J5
.0710–.0896	66	Fairless,Pa. U5
.0710–.0971	42	Fairfield,Ala. T2
.0710–.0971	48	IndianaHarbor,Ind. Y1
.0710–.0971	60	Lackawanna,N.Y. B2
.0710–.1120	44	Niles,O. N12
.072–.082	40	Weirton,W.Va. W6
.0747–.1793	48	Portsmouth,O. D2
.0747–.1799	60	Fontana,Calif. K1
.0822–.0971	28½	Mansfield,O. E6
.0822–.0971	50	Steubenville,O. W10
.0822–.0971	54	GraniteCity,Ill. G4
.0822–.0971	66	Cleveland J5
.0822–.0971	78½	Ecorse,Mich. G5
.0822–.0971	84	Pittsburgh J5
.0822–.1120	68	Ashland,Ky. A10
.0822–.1419	60	SparrowsPoint,Md. B2
.0822–.1799	72	Gary,Ind. U5
.0822–.1799	72	Youngstown Y1
.0822–.1799	73	Dravosburg,Pa. U5
.0822–.1868	60	Geneva,Utah C11
.0822–.2017	22	Sharon,Pa. S3
.0822–.2299	72	IndianaHarbor,Ind. I-2
.083–.094	42	Weirton,W.Va. W6
.0897–.1799	72	Fairless,Pa. U5
.0897–.1799	65	Fontana,Calif. K1
.095–.134	44	Weirton,W.Va. W6
.0972–.1120	34½	Mansfield,O. E6
.0972–.1120	86	Ecorse,Mich. G5
.0972–.1419	48	Kokomo,Ind. C16
.0972–.1419	60	Gadsden,Ala. R2
.0972–.1718	50	IndianaHarbor,Ind. Y1
.0972–.1718	60	GraniteCity,Ill. G4
.0972–.1793	44	Fairfield,Ala. T2
.0972–.1799	54	Steubenville,O. W10
.0972–.2299	72	Cleveland J5
.0972–.2299	90	Pittsburgh J5
.0972 and thicker	72	Lackawanna,N.Y. B2
.104–.118	87	Cleveland R2
.1046–.1195	72	Munhall,Pa. U5
.1046–.1799	72	Fontana,Calif. K1
.1046–.2299	16½	Fontana,Calif. K1
.1046–.250	26	Economy,Pa. B14
.1121–.1419	40	Niles,O. N12
.1121–.1799	72	Ashland,Ky. A10
.1121–.1799	89½	Ecorse,Mich. G5
.1121–.2465	42	Mansfield,O. E6
.1130–.1569	86	SouthChicago,Ill. U5
.119–.186	90	Cleveland R2
.1196–.1344	78	Munhall,Pa. U5
.1345–.1494	84	Munhall,Pa. U5
.135–.156	36	Weirton,W.Va. W6
.142 and thicker	60	SparrowsPoint,Md. B2
.1495–.1799	90	Munhall,Pa. U5
.157–.1799	88¼	SouthChicago,Ill. U5
.157–.1868	60	Gadsden,Ala. R2
.157–.229	21½	Weirton,W.Va. W6
.1719–.2299	48	IndianaHarbor,Ind. Y1
.1793	90	Fairfield,Ala. T2
over .1793–.2299	48	Fairfield,Ala. T2
.180–.1875	48	Ecorse,Mich. G5
.180–.1880	48	Fairless,Pa. U5
.180–.2299	48	Ashland,Ky. A10
.180–.2299	48	Gary,Ind. U5
.180–.2299	48	Munhall,Pa. U5
.180–.2299	48	Steubenville,O. W10
.180–.2299	48	Youngstown Y1
.180–.2299	49	Dravosburg,Pa. U5
.187–.2299	48	Cleveland R2
.1875	48	Geneva,Utah C11
.1875	48	GraniteCity,Ill. G4
.1875	48	Houston S5
over .1875–.2299	Check with mill for widths	Ecorse,Mich. G5

SHEETS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Hot-Rolled (high-strength) Coils

Thickness (inches)	Max. Width (inches)	Mill Point, Producer
.025–.2299	22	Riverdale,Ill. A1
.0568–.0709	49	Geneva,Utah C11
.059–.135	23	Conshohocken,Pa. A3
.070–.080	30	Weirton,W.Va. W6
.0710–.0759	40	Gary,Ind. U5
.0710–.0759	49	Dravosburg,Pa. U5
.0710–.0821	42	Cleveland J5
.0710–.0821	48	Lackawanna,N.Y. B2
.0710–.0821	48	SparrowsPoint,Md. B2
.0710–.0821	50	Ecorse,Mich. G5
.0710–.0821	50	Pittsburgh J5
.0710–.0821	54	Geneva,Utah C11
.0710–.0821	54	Pittsburg,Calif. C11
.0710–.0896	50	Cleveland R2
.0710–.0971	34	Fairfield,Ala. T2
.0710–.10	30	Youngstown U5
.0760–.0821	46	Gary,Ind. U5
.0760–.0821	49	Dravosburg,Pa. U5
.081–.090	36	Weirton,W.Va. W6
.0821–.1875	48	IndianaHarbor,Ind. Y1
.0822–.0971	48	Cleveland J5
.0822–.0971	50	Gary,Ind. U5
.0822–.0971	50	SparrowsPoint,Md. B2
.0822–.0971	54	Lackawanna,N.Y. B2
.0822–.0971	55	Dravosburg,Pa. U5
.0822–.0971	64	Ecorse,Mich. G5
.0822–.0971	67	Pittsburgh J5
.0822–.1419	60	Pittsburg,Calif. C11
.0822–.1868	60	Geneva,Utah C11
.0897–.1045	58	Cleveland R2
.090–.2299	42	Midland,Pa. C18
.091–.125	42	Weirton,W.Va. W6
.0972–.1120	54	Cleveland J5
.0972–.1120	60	Gary,Ind. U5
.0972–.1120	60	Lackawanna,N.Y. B2
.0972–.1120	61	Dravosburg,Pa. U5
.0972–.1120	70	Ecorse,Mich. G5
.0972–.1120	72	Pittsburgh J5
.0972–.1419	37¼	Fairfield,Ala. T2
.0972–.1799	54	SparrowsPoint,Md. B2
.1001–.2299	36	Youngstown U5
.1046–.1195	67	Cleveland R2
.1121–.1270	60	Cleveland J5
.1121–.1270	62	Lackawanna,N.Y. B2
.1121–.1270	63	Dravosburg,Pa. U5
.1121–.1419	75	Pittsburgh J5
.1121–.1799	62	Gary,Ind. U5
.1121–.1799	80	Ecorse,Mich. G5
.1196–.1344	72	Cleveland R2
.1271–.1718	66	Cleveland J5
.1271–.1799	72	Lackawanna,N.Y. B2
.1345–.1494	78	Cleveland R2
.135–.1489	20¼	Weirton,W.Va. W6
.1420–.1569	80	Pittsburgh J5
.149–.175	21½	Weirton,W.Va. W6
.1495–.1643	81	Cleveland R2
.1570–.2299	84	Pittsburgh J5
.1644–.1799	83	Cleveland R2
.1719–.2299	48	Cleveland J5
.176–.200	19	Weirton,W.Va. W6
.180–.1875	48	Lackawanna,N.Y. B2
.180–.1875	48	SparrowsPoint,Md. B2
.180–.2299	48	Cleveland R2
.180–.2299	48	Gary,Ind. U5
.1875	48	Geneva,Utah C11
over .1875–.2299	Check with mill for widths	Ecorse,Mich. G5
.20–.229	15	Weirton,W.Va. W6
Check with mill for sizes		Ashland,Ky. A10
Check with mill for sizes		Fairless,Pa. U5
Check with mill for sizes		IndianaHarbor,Ind. I-2

Hot-Rolled (high-strength) Cut Lengths

Thickness (inches)	Max. Width (inches)	Mill Point, Producer
.025–.2299	22	Riverdale,Ill. A1
.0568–.0709	49	Geneva,Utah C11
.059–.187	23	Conshohocken,Pa. A3
.0598–.103	76	Cleveland R2
.067–.073	42	IndianaHarbor,Ind. I-2
.070–.080	30	Weirton,W.Va. W6
.0710–.0759	40	Gary,Ind. U5
.0710–.0759	44	Fairless,Pa. U5
.0710–.0759	49	Dravosburg,Pa. U5
.0710–.0821	42	Cleveland J5
.0710–.0821	48	Lackawanna,N.Y. B2
.0710–.0821	48	SparrowsPoint,Md. B2
.0710–.0821	50	Ecorse,Mich. G5
.0710–.0821	50	Pittsburgh J5
.0710–.0821	54	Geneva,Utah C11
.0710–.0821	60	Youngstown Y1
.0710–.0971	34	Fairfield,Ala. T2
.0710–.10	30	Youngstown U5
.0710–.1419	48	Pittsburg,Calif. C11
.0710–.2299	48	IndianaHarbor,Ind. Y1
.074–.079	44	IndianaHarbor,Ind. I-2
.0760–.0821	46	Gary,Ind. U5
.0760–.0821	48	Fairless,Pa. U5
.0760–.0821	49	Dravosburg,Pa. U5
.080–.085	46	IndianaHarbor,Ind. I-2
.081–.090	36	Weirton,W.Va. W6
.0822–.0971	48	Cleveland J5
.0822–.0971	50	Gary,Ind. U5
.0822–.0971	50	SparrowsPoint,Md. B2
.0822–.0971	54	Lackawanna,N.Y. B2
.0822–.0971	55	Dravosburg,Pa. U5
.0822–.0971	64	Ecorse,Mich. G5
.0822–.0971	66	Youngstown Y1
.0822–.0971	67	Pittsburgh J5
.0822–.1345	49	Fairless,Pa. U5
.0822–.1868	60	Geneva,Utah C11
.086–.091	48	IndianaHarbor,Ind. I-2
.091–.125	42	Weirton,W.Va. W6
.092–.097	50	IndianaHarbor,Ind. I-2
.0972–.1120	54	Cleveland J5
.0972–.1120	60	Gary,Ind. U5
.0972–.1120	60	Lackawanna,N.Y. B2
.0972–.1120	61	Dravosburg,Pa. U5
.0972–.1120	70	Ecorse,Mich. G5
.0972–.1120	72	Pittsburgh J5
.0972–.1419	37¼	Fairfield,Ala. T2
.0972–.1799	54	SparrowsPoint,Md. B2
.0972–.1799	72	Youngstown Y1
.098–.103	52	IndianaHarbor,Ind. I-2
.1001–.2299	36	Youngstown U5
.104–.109	54	IndianaHarbor,Ind. I-2
.104–.118	87	Cleveland R2
.1046–.1195	66	Munhall,Pa. U5
.1046–.2299	50	Fontana,Calif. K1
.110–.115	56	IndianaHarbor,Ind. I-2
.1121–.1270	60	Cleveland J5
.1121–.1270	62	Lackawanna,N.Y. B2
.1121–.1270	63	Dravosburg,Pa. U5
.1121–.1419	75	Pittsburgh J5
.1121–.1799	62	Gary,Ind. U5
.1121–.1799	80	Ecorse,Mich. G5
.116–.123	58	IndianaHarbor,Ind. I-2
.119–.186	90	Cleveland R2
.1196–.1344	72	Munhall,Pa. U5
.124–.133	60	IndianaHarbor,Ind. I-2
.125–.1799	60	Fontana,Calif. K1
.1271–.1718	66	Cleveland J5
.1271–.1799	72	Lackawanna,N.Y. B2
.1271–.1799	72	SouthChicago,Ill. U5
.1271–.1799	73	Dravosburg,Pa. U5
.1340–.1569	86	SouthChicago,Ill. U5
.134–.180	48	IndianaHarbor,Ind. I-2
.1345–.1799	84	Munhall,Pa. U5
.135–.1489	20¼	Weirton,W.Va. W6
.1420–.1569	80	Pittsburgh J5
.149–.229	21½	Weirton,W.Va. W6
.155–.2299	16½	Fontana,Calif. K1
.156–.1799	72	Fontana,Calif. K1
.1570–.1799	88¼	SouthChicago,Ill. U5
.1570–.2299	84	Pittsburgh J5
.1719–.2299	48	Cleveland J5
.1793–.2299	66	Fairfield,Ala. T2
.180–.1875	48	Ecorse,Mich. G5
.180–.2299	48	Gary,Ind. U5
.180–.2299	48	Lackawanna,N.Y. B2
.180–.2299	48	Munhall,Pa. U5
.180–.2299	48	SparrowsPoint,Md. B2
.180–.2299	48	Youngstown Y1
.180–.2299	49	Dravosburg,Pa. U5
.187–.2299	48	Cleveland R2
.1875	48	Geneva,Utah C11
.1875	48	Houston S5
over .1875–.2299	Check with mill for widths	Ecorse,Mich. G5
Check with mill for sizes		Ashland,Ky. A10

Cold-Rolled (carbon) Coils

Thickness (inches)	Max. Width (inches)	Mill Point, Producer
.005–.125	36	NewCastle,Pa. E5
.010–.10	over 24–36	Warren,O. R2
.010–.125	over 12–23 11/16	Warren,O. R2
.0103–.130	36	Cleveland R2
.0113–.0141	38	IndianaHarbor,Ind. I-2
.0113–.0171	41	Fairfield,Ala. T2
.012–.059	36	Follansbee,W.Va. F4
.0125–.130	45	Cleveland R2
.0142–.0156	34	Youngstown Y1
.0142–.0156	36	IndianaHarbor,Ind. Y1
.0142–.0156	38	Pittsburgh J5
.0142–.0171	36	Pittsburg,Calif. C11
.0142–.0171	38	Gary,Ind. U5
.0142–.0171	38	GraniteCity,Ill. G4
.0142–.0171	42	SparrowsPoint,Md. B2
.0142–.0194	35⅞	Yorkville,O. W10
.0142–.0194	38	Middletown,O. A10
.0142–.0224	36	Fairless,Pa. U5
.0142–.0224	36	Lackawanna,N.Y. B2
.0142–.0224	52	IndianaHarbor,Ind. I-2
.0142–.0238	36	Dravosburg,Pa. U5
.0142–.027	38	Weirton,W.Va. W6
.0142–.0821	35	Fontana,Calif. K1
.0142–.0971	60	Allenport,Pa. P7
.0142–.130	32	Cleveland R2
.0149–.0239	36	Aliquippa,Pa. J5
.0157–.0171	36	Youngstown Y1
.0157–.0171	40	Pittsburgh J5
.0157–.0194	42	IndianaHarbor,Ind. Y1
.0164–.130	48	Cleveland R2
.0172–.0194	16	Cleveland J5
.0172–.0194	38	Youngstown Y1
.0172–.0194	42	Pittsburgh J5
.0172–.0224	42	Gary,Ind. U5
.0172–.0224	42	GraniteCity,Ill. G4
.0172–.0224	42	Pittsburg,Calif. C11
.0172–.0224	44	SparrowsPoint,Md. B2
.0172–.0448	42	Fairfield,Ala. T2
.0195–.0224	38	Cleveland J5
.0195–.0224	40	Youngstown Y1
.0195–.0224	46	Pittsburgh J5
.0195–.0254	34	Yorkville,O. W10
.0195–.0254	48	IndianaHarbor,Ind. Y1
.0195–.0343	48	Middletown,O. A10
.0225–.0254	38	Steubenville,O. W10
.0225–.0254	45	Youngstown Y1
.0225–.0254	48	Gary,Ind. U5
.0225–.0254	48	Pittsburg,Calif. C11
.0225–.0254	50	Cleveland J5
.0225–.0283	40	Ecorse,Mich. G5
.0225–.0283	48	Fairless,Pa. U5
.0225–.0283	48	Lackawanna,N.Y. B2
.0225–.0283	48	Pittsburgh J5
.0225–.0283	52	SparrowsPoint,Md. B2
.0225–.0508	48	GraniteCity,Ill. G4

SHEETS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Cold-Rolled (carbon) Coils

Thickness (inches)	Max. Width (inches)	Mill Point, Producer
.0225–.0821	72	IndianaHarbor,Ind. I-2
.0239–.0283	48	Dravosburg,Pa. U5
.0239–.130	60	Cleveland R2
.0255–.0283	48	Youngstown Y1
.0255–.0283	54	Gary,Ind. U5
.0255–.0343	48	Steubenville,O. W10
.0255–.0343	60	Cleveland J5
.0255–.0821	50	IndianaHarbor,Ind. Y1
.0255–.0821	52	Pittsburg,Calif. C11
.0255–.125	48	Portsmouth,O. D2
.0271–.031	42	Weirton,W.Va. W6
.0284–.0313	60	Dravosburg,Pa. U5
.0284–.0313	60	Ecorse,Mich. G5
.0284–.0313	60	Fairless,Pa. U5
.0284–.0313	60	Gary,Ind. U5
.0284–.0313	60	Youngstown Y1
.0284–.0313	74	Pittsburgh J5
.0284–.0343	60	Lackawanna,N.Y. B2
.0284–.0821	60	SparrowsPoint,Md. B2
.0292–.130	90	Cleveland R2
.0311–.095	46	Weirton,W.Va. W6
.0314–.0343	66	Ecorse,Mich. G5
.0314–.0343	66	Fairless,Pa. U5
.0314–.0343	66	Youngstown Y1
.0314–.0343	68	Dravosburg,Pa. U5
.0314–.0343	68	Gary,Ind. U5
.0314–.0343	76	Pittsburgh J5
.0344–.0388	68	Middletown,O. A10
.0344–.0388	86	Pittsburgh J5
.0344–.0635	72	Gary,Ind. U5
.0344–.0635	90	Ecorse,Mich. G5
.0344–.0750	72	Dravosburg,Pa. U5
.0344–.0750	72	Fairless,Pa. U5
.0344–.0821	54	Steubenville,O. W10
.0344–.0821	72	Cleveland J5
.0344–.0930	70	Youngstown Y1
.0344–.1270	72	Lackawanna,N.Y. B2
.0389–.0448	88	Pittsburgh J5
.0389–.0567	72	Middletown,O. A10
.0449–.0635	90	Pittsburgh J5
.0449–.0971	43	Fairfield,Ala. T2
.0509–.0635	45½	GraniteCity,Ill. G4
.0568–.1120	Check with mill for widths	Middletown,O. A10
.0636–.0709	80	Pittsburgh J5
.0636–.0821	72	Ecorse,Mich. G5
.0710–.0821	70	Pittsburgh J5
.0751–.0971	Check with mill for widths	Fairless,Pa. U5
.0822–.0971	60	Pittsburgh J5
.0822–.0971	62	IndianaHarbor,Ind. I-2
.0822–.0971	65	Ecorse,Mich. G5
.0822–.1120	48	Cleveland J5
.0972–.1120	54	Pittsburgh J5
.0972–.1270	60	Ecorse,Mich. G5
.1121–.1270	48	Pittsburgh J5

Cold-Rolled (carbon) Cut Lengths

Thickness (inches)	Max. Width (inches)	Mill Point, Producer
.005–.125	36	NewCastle,Pa. E5
.010–.10	over 24–36	Warren,O. R2
.010–.125	over 12–23½	Warren,O. R2
.0103–.130	90	Cleveland R2
.0113–.0141	38	IndianaHarbor,Ind. I-2
.012–.059	36	Follansbee,W.Va. F4
.0142–.0156	36	IndianaHarbor,Ind. Y1
.0142–.0156	36	Youngstown Y1
.0142–.0156	38	Pittsburgh J5
.0142–.0171	36	Pittsburg,Calif. C11
.0142–.0171	38	Gary,Ind. U5
.0142–.0171	38	GraniteCity,Ill. G4
.0142–.0171	41	Fairfield,Ala. T2
.0142–.0171	42	SparrowsPoint,Md. B2
.0142–.0194	35⅝	Yorkville,O. W10
.0142–.0194	38	Middletown,O. A10
.0142–.0224	36	Fairless,Pa. U5
.0142–.0224	36	Lackawanna,N.Y. B2
.0142–.0224	52	IndianaHarbor,Ind. I-2
.0142–.0238	36	Dravosburg,Pa. U5
.0142–.027	38	Weirton,W.Va. W6
.0142–.0821	35	Fontana,Calif. K1
.0142–.0971	60	Allenport,Pa. P7
.0149–.0239	36	Aliquippa,Pa. J5
.0157–.0171	40	Pittsburgh J5
.0157–.0194	42	IndianaHarbor,Ind. Y1
.0157–.0194	42	Youngstown Y1
.0172–.0194	16	Cleveland J5
.0172–.0194	42	Pittsburgh J5
.0172–.0224	42	Gary,Ind. U5
.0172–.0224	42	GraniteCity,Ill. G4
.0172–.0224	42	Pittsburg,Calif. C11
.0172–.0224	44	SparrowsPoint,Md. B2
.0172–.0448	42	Fairfield,Ala. T2
.0195–.0224	38	Cleveland J5
.0195–.0224	46	Pittsburgh J5
.0195–.0254	34	Yorkville,O. W10
.0195–.0254	48	IndianaHarbor,Ind. Y1
.0195–.0254	48	Youngstown Y1
.0195–.0343	48	Middletown,O. A10
.0225–.0254	38	Steubenville,O. W10
.0225–.0254	48	Gary,Ind. U5
.0225–.0254	50	Cleveland J5
.0225–.0283	40	Ecorse,Mich. G5
.0225–.0283	48	Fairless,Pa. U5
.0225–.0283	48	Lackawanna,N.Y. B2
.0225–.0283	48	Pittsburgh J5
.0225–.0283	52	SparrowsPoint,Md. B2
.0225–.0508	48	GraniteCity,Ill. G4
.0225–.0821	48	Pittsburg,Calif. C11
.0225–.0821	72	IndianaHarbor,Ind. I-2
.0239–.0283	48	Dravosburg,Pa. U5
.0255–.0283	54	Gary,Ind. U5
.0255–.0313	60	Youngstown Y1
.0255–.0343	48	Steubenville,O. W10
.0255–.0343	60	Cleveland J5
.0255–.0635	50	IndianaHarbor,Ind. Y1
.0255–.0897	48	Portsmouth,O. D2
.0271–.031	42	Weirton,W.Va. W6
.0284–.0313	60	Dravosburg,Pa. U5
.0284–.0313	60	Ecorse,Mich. G5
.0284–.0313	60	Fairless,Pa. U5
.0284–.0313	60	Gary,Ind. U5
.0284–.0313	74	Pittsburgh J5
.0284–.0343	60	Lackawanna,N.Y. B2
.0284–.0821	60	SparrowsPoint,Md. B2
.0311–.095	46	Weirton,W.Va. W6
.0314–.0343	66	Ecorse,Mich. G5
.0314–.0343	66	Fairless,Pa. U5
.0314–.0343	66	Youngstown Y1
.0314–.0343	68	Dravosburg,Pa. U5
.0314–.0343	68	Gary,Ind. U5
.0314–.0343	76	Pittsburgh J5
.0344–.0388	68	Middletown,O. A10
.0344–.0388	86	Pittsburgh J5
.0344–.0635	90	Ecorse,Mich. G5
.0344–.0750	72	Fairless,Pa. U5
.0344–.0821	72	Cleveland J5
.0344–.0971	72	Gary,Ind. U5
.0344–.0971	72	Youngstown Y1
.0344–.1120	72	Dravosburg,Pa. U5
.0344–.1270	54	Steubenville,O. W10
.0344–.1270	72	Lackawanna,N.Y. B2
.0389–.0448	88	Pittsburgh J5
.0389–.1120	72	Middletown,O. A10
.0449–.0635	90	Pittsburgh J5
.0449–.0971	43	Fairfield,Ala. T2
.0509–.0635	45½	GraniteCity,Ill. G4
.0636–.0709	80	Pittsburgh J5
.0636–.0821	72	Ecorse,Mich. G5
.0710–.0821	70	Pittsburgh J5
.0751–.0971	Check with mill for widths	Fairless,Pa. U5
.0822–.0971	60	Pittsburgh J5
.0822–.0971	62	IndianaHarbor,Ind. I-2
.0822–.0971	65	Ecorse,Mich. G5
.0822–.1120	63	Cleveland J5
.0951–.104	42	Weirton,W.Va. W6
.0972–.1120	54	Pittsburgh J5
.0972–.1270	60	Ecorse,Mich. G5
.0972–.1868	60	Gary,Ind. U5
.1041–.125	36	Weirton,W.Va. W6
.1121–.1270	48	Pittsburgh J5
.1121–.1868	60	Dravosburg,Pa. U5

Cold-Rolled (high-strength) Coils

Thickness (inches)	Max. Width (inches)	Mill Point, Producer
.0142–.0171	34	IndianaHarbor,Ind. Y1
.0172–.0224	36	IndianaHarbor,Ind. Y1
.0172–.0224	36	Youngstown Y1
.020–.030	32	Weirton,W.Va. W6
.0225–.0283	40	IndianaHarbor,Ind. Y1
.0225–.0283	44	Youngstown Y1
.0284–.0313	40	Dravosburg,Pa. U5
.0284–.0313	48	Pittsburgh J5
.0284–.0343	40	Ecorse,Mich. G5
.0284–.0343	42	Cleveland J5
.0284–.0343	42	Lackawanna,N.Y. B2
.0284–.0343	42	SparrowsPoint,Md. B2
.0284–.0343	44	Gary,Ind. U5
.0284–.0343	54	Youngstown Y1
.0284–.0821	42	IndianaHarbor,Ind. Y1
.0301–.035	33	Weirton,W.Va. W6
.0314–.0343	49	Pittsburgh J5
.0314–.0388	44	Dravosburg,Pa. U5
.0344–.0388	48	Ecorse,Mich. G5
.0344–.0388	48	Lackawanna,N.Y. B2
.0344–.0388	54	Pittsburgh J5
.0344–.0448	48	Cleveland J5
.0344–.0448	48	Gary,Ind. U5
.0344–.0448	60	Youngstown Y1
.0344–.0508	48	SparrowsPoint,Md. B2
.0351–.040	37	Weirton,W.Va. W6
.0389–.0448	48	Dravosburg,Pa. U5
.0389–.0567	54	Lackawanna,N.Y. B2
.0389–.0567	60	Pittsburgh J5
.0389–.0709	60	Ecorse,Mich. G5
.0401–.093	42	Weirton,W.Va. W6
.0449–.0567	54	Cleveland J5
.0449–.0567	54	Dravosburg,Pa. U5
.0449–.0567	54	Gary,Ind. U5
.0449–.0821	95	Youngstown Y1
.0509–.0635	40	SparrowsPoint,Md. B2
.0568–.0635	58	Pittsburgh J5
.0568–.0709	60	Dravosburg,Pa. U5
.0568–.0821	60	Cleveland J5
.0568–.0821	60	Lackawanna,N.Y. B2
.0568–.0971	60	Gary,Ind. U5
.0636–.0709	32	SparrowsPoint,Md. B2
.0636–.0709	55	Pittsburgh J5
.0710–.0821	36	SparrowsPoint,Md. B2
.0710–.0821	48	Pittsburgh J5
.0710–.0821	54	Dravosburg,Pa. U5
.0710–.0971	55	Ecorse,Mich. G5
.0822–.0971	40	Pittsburgh J5
.0822–.0971	48	Lackawanna,N.Y. B2
.0822–.1120	48	Cleveland J5
.0972–.1120	35	Pittsburgh J5
.0972–.1270	40	Ecorse,Mich. G5
Check with mill for sizes		Cleveland R2
Check with mill for sizes		Fairless,Pa. U5

SHEETS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Cold-Rolled (high-strength) Cut Lengths

Thickness (inches)	Max. Width (inches)	Mill Point, Producer
.0142–.0171	.34	IndianaHarbor,Ind. Y1
.0172–.0224	.36	IndianaHarbor,Ind. Y1
.0172–.0224	.36	Youngstown Y1
.020–.030	.32	Weirton,W.Va. W6
.0225–.0283	.40	IndianaHarbor,Ind. Y1
.0225–.0283	.44	Youngstown Y1
.0284–.0313	.40	Dravosburg,Pa. U5
.0284–.0313	.48	Pittsburgh J5
.0284–.0343	.40	Ecorse,Mich. G5
.0284–.0343	.42	Cleveland J5
.0284–.0343	.42	Lackawanna,N.Y. B2
.0284–.0343	.42	SparrowsPoint,Md. B2
.0284–.0343	.44	Gary,Ind. U5
.0284–.0343	.54	Youngstown Y1
.0284–.0388	.40	Fairless,Pa. U5
.0284–.0635	.42	IndianaHarbor,Ind. Y1
.0301–.035	.33	Weirton,W.Va. W6
.0314–.0343	.49	Pittsburgh J5
.0314–.0388	.44	Dravosburg,Pa. U5
.0344–.0388	.48	Ecorse,Mich. G5
.0344–.0388	.48	Lackawanna,N.Y. B2
.0344–.0388	.54	Pittsburgh J5
.0344–.0448	.48	Cleveland J5
.0344–.0448	.48	Gary,Ind. U5
.0344–.0448	.60	Youngstown Y1
.0344–.0508	.48	SparrowsPoint,Md. B2
.0351–.040	.37	Weirton,W.Va. W6
.0389–.0448	.48	Dravosburg,Pa. U5
.0389–.0567	.54	Lackawanna,N.Y. B2
.0389–.0567	.60	Pittsburgh J5
.0389–.0709	.60	Ecorse,Mich. G5
.0389–.0750	.48	Fairless,Pa. U5
.0401–.093	.42	Weirton,W.Va. W6
.0449–.0567	.54	Cleveland J5
.0449–.0567	.54	Dravosburg,Pa. U5
.0449–.0567	.54	Gary,Ind. U5
.0449–.0821	.65	Youngstown Y1
.0509–.0635	.40	SparrowsPoint,Md. B2
.0568–.0635	.58	Pittsburgh J5
.0568–.0635	.60	Dravosburg,Pa. U5
.0568–.0821	.60	Lackawanna,N.Y. B2
.0568–.0971	.60	Gary,Ind. U5
.0568–.1120	.60	Cleveland J5
.0636–.0709	.32	SparrowsPoint,Md. B2
.0636–.0709	.55	Pittsburgh J5
.0710–.0821	.30	SparrowsPoint,Md. B2
.0710–.0821	.48	Pittsburgh J5
.0710–.0971	.55	Ecorse,Mich. G5
.0822–.0971	.40	Pittsburgh J5
.0822–.0971	.48	Lackawanna,N.Y. B2
.0972–.1120	.35	Pittsburgh J5
.0972–.1270	.40	Ecorse,Mich. G5
Check with mill for sizes		Cleveland R2

Galvanized (carbon) Hot-Dipped, Coils

Galv. Sheet Gage	Max. Width (in.)	Mill Point, Producer
12	.30	IndianaHarbor,Ind. I-2
12	.38	Butler,Pa. A10
13	.38	Butler,Pa. A10
13	.42	Fairfield,Ala. T2
14	.38	Butler,Pa. A10
14	.42	Fairfield,Ala. T2
14	.48	IndianaHarbor,Ind. I-2
14		Check with mill for widths
		Middletown,O. A10
15	.38	Butler,Pa. A10
15	.42	Fairfield,Ala. T2
15	.48	IndianaHarbor,Ind. I-2
15		Check with mill for widths
		Middletown,O. A10
16	.36	SparrowsPoint,Md. B2
16	.38	Butler,Pa. A10
16	.42	Fairfield,Ala. T2
16	.48	IndianaHarbor,Ind. I-2
16		Check with mill for widths
		Middletown,O. A10
17	.36	SparrowsPoint,Md. B2
17	.38	Butler,Pa. A10
17	.42	Fairfield,Ala. T2
17	.48	IndianaHarbor,Ind. I-2
17		Check with mill for widths
		Middletown,O. A10
18	.36	Dravosburg,Pa. U5
18	.36	MartinsFerry,O. W10
18	.38	Butler,Pa. A10
18	.42	Fairfield,Ala. T2
18	.45	Gary,Ind. U5
18	.48	IndianaHarbor,Ind. I-2
18	.48	SparrowsPoint,Md. B2
18	.51	Middletown,O. A10
19	.36	Dravosburg,Pa. U5
19	.36	MartinsFerry,O. W10
19	.38	Butler,Pa. A10
19	.42	Fairfield,Ala. T2
19	.48	Gary,Ind. U5
19	.48	IndianaHarbor,Ind. I-2
19	.48	SparrowsPoint,Md. B2
19	.51	Middletown,O. A10
20	.36	Dravosburg,Pa. U5
20	.36	MartinsFerry,O. W10
20	.38	Butler,Pa. A10
20	.42	Fairfield,Ala. T2
20	.48	Gary,Ind. U5
20	.48	IndianaHarbor,Ind. I-2
20	.48	SparrowsPoint,Md. B2
20	.51	Middletown,O. A10
21	.36	Dravosburg,Pa. U5
21	.36	MartinsFerry,O. W10
21	.38	Butler,Pa. A10
21	.42	Fairfield,Ala. T2
21	.48	Gary,Ind. U5
21	.48	IndianaHarbor,Ind. I-2
21	.48	SparrowsPoint,Md. B2
21	.51	Middletown,O. A10
22	.36	Dravosburg,Pa. U5
22	.36	MartinsFerry,O. W10
22	.38	Butler,Pa. A10
22	.42	Fairfield,Ala. T2
22	.48	Gary,Ind. U5
22	.48	IndianaHarbor,Ind. I-2
22	.48	Middletown,O. A10
22	.48	SparrowsPoint,Md. B2
23	.36	Dravosburg,Pa. U5
23	.36	MartinsFerry,O. W10
23	.38	Butler,Pa. A10
23	.42	Fairfield,Ala. T2
23	.48	Gary,Ind. U5
23	.48	Middletown,O. A10
23	.48	SparrowsPoint,Md. B2
24	.36	Dravosburg,Pa. U5
24	.36	IndianaHarbor,Ind. I-2
24	.36	MartinsFerry,O. W10
24	.38	Butler,Pa. A10
24	.42	Fairfield,Ala. T2
24	.48	Gary,Ind. U5
24	.48	Middletown,O. A10
24	.48	SparrowsPoint,Md. B2
25	.36	Dravosburg,Pa. U5
25	.36	MartinsFerry,O. W10
25	.38	Butler,Pa. A10
25	.42	Fairfield,Ala. T2
25	.48	Gary,Ind. U5
25	.48	Middletown,O. A10
25	.48	SparrowsPoint,Md. B2
26	.36	Dravosburg,Pa. U5
26	.36	IndianaHarbor,Ind. I-2
26	.36	MartinsFerry,O. W10
26	.38	Butler,Pa. A10
26	.42	Fairfield,Ala. T2
26	.42	Gary,Ind. U5
26	.48	Middletown,O. A10
26	.48	SparrowsPoint,Md. B2
27	.36	Dravosburg,Pa. U5
27	.36	MartinsFerry,O. W10
27	.36	Middletown,O. A10
27	.38	Butler,Pa. A10
27	.41	Fairfield,Ala. T2
27	.42	Gary,Ind. U5
28	.30	IndianaHarbor,Ind. I-2
28	.36	Dravosburg,Pa. U5
28	.36	MartinsFerry,O. W10
28	.36	Middletown,O. A10
28	.38	Butler,Pa. A10
28	.41	Fairfield,Ala. T2
28	.42	Gary,Ind. U5
29	.30	IndianaHarbor,Ind. I-2
29	.36	MartinsFerry,O. W10
29	.41	Fairfield,Ala. T2
30	.30	IndianaHarbor,Ind. I-2
30	.36	MartinsFerry,O. W10
30	.41	Fairfield,Ala. T2

Galvanized (carbon) Hot-Dipped, Cut Lengths

Galv. Sheet Gage	Max. Width (in.)	Mill Point, Producer
8	.36	IndianaHarbor,Ind. I-2
8	.36	Newport,Ky. N9
8	.48	SparrowsPoint,Md. B2
8	.60	Ashland,Ky. A10
9	.36	Newport,Ky. N9
9	.48	SparrowsPoint,Md. B2
9	.60	Ashland,Ky. A10
10	.48	Canton,O. R2
10	.48	IndianaHarbor,Ind. I-2
10	.48	Kokomo,Ind. C16
10	.48	MartinsFerry,O. W10
10	.48	Newport,Ky. N9
10	.48	Pittsburg,Calif. C11
10	.48	SparrowsPoint,Md. B2
10	.48	Steubenville,O. W10
10	.48	Weirton,W.Va. W6
10	.60	Ashland,Ky. A10
10	.60	Gary,Ind. U5
11	.48	Kokomo,Ind. C16
11	.48	Newport,Ky. N9
11	.48	Pittsburg,Calif. C11
11	.48	SparrowsPoint,Md. B2
11	.48	Weirton,W.Va. W6
11	.54	Dravosburg,Pa. U5
11	.60	Ashland,Ky. A10
11	.60	Gary,Ind. U5
12	.30	Fairfield,Ala. T2
12	.30	IndianaHarbor,Ind. I-2
12	.38	Butler,Pa. A10
12	.48	Canton,O. R2
12	.48	Gadsden,Ala. R2
12	.48	Kokomo,Ind. C16
12	.48	MartinsFerry,O. W10
12	.48	Newport,Ky. N9
12	.48	Pittsburg,Calif. C11
12	.48	SparrowsPoint,Md. B2
12	.48	Steubenville,O. W10
12	.48	Weirton,W.Va. W6
12	.54	Dravosburg,Pa. U5
12	.60	Ashland,Ky. A10
12	.60	Gary,Ind. U5
13	.38	Butler,Pa. A10
13	.42	Fairfield,Ala. T2
13	.48	Canton,O. R2
13	.48	Gadsden,Ala. R2
13	.48	Newport,Ky. N9
13	.48	Pittsburg,Calif. C11
13	.48	SparrowsPoint,Md. B2
13	.48	Weirton,W.Va. W6
13	.54	Ashland,Ky. A10
13	.54	Dravosburg,Pa. U5
13	.60	Gary,Ind. U5
14	.36	Torrance,Calif. C11
14	.38	Butler,Pa. A10
14	.42	Fairfield,Ala. T2
14	.46	Weirton,W.Va. W6
14	.48	Canton,O. R2
14	.48	Gadsden,Ala. R2
14	.48	IndianaHarbor,Ind. I-2
14	.48	Kokomo,Ind. C16
14	.48	MartinsFerry,O. W10
14	.48	Newport,Ky. N9
14	.48	Niles,O. N12
14	.48	Pittsburg,Calif. C11
14	.48	SparrowsPoint,Md. B2
14	.48	Steubenville,O. W10
14	.51	Middletown,O. A10
14	.54	Ashland,Ky. A10
14	.54	Dravosburg,Pa. U5
14	.60	Gary,Ind. U5
15	.38	Butler,Pa. A10
15	.40	Torrance,Calif. C11
15	.42	Fairfield,Ala. T2
15	.46	Weirton,W.Va. W6
15	.48	Canton,O. R2
15	.48	Gadsden,Ala. R2
15	.48	IndianaHarbor,Ind. I-2
15	.48	Kokomo,Ind. C16
15	.48	Newport,Ky. N9
15	.48	Niles,O. N12
15	.48	Pittsburg,Calif. C11
15	.48	SparrowsPoint,Md. B2
15	.51	Middletown,O. A10
15	.54	Ashland,Ky. A10
15	.54	Dravosburg,Pa. U5
15	.60	Gary,Ind. U5

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Galvanized (carbon) Hot-Dipped, Cut Lengths

Galv. Sheet Gage	Max. Width (in.)	Mill Point, Producer
16	36	Delphos,O. N16
16	36	Dover,O. R1
16	38	Butler,Pa. A10
16	40	Torrance,Calif. C11
16	42	Fairfield,Ala. T2
16	46	Weirton,W.Va. W6
16	48	Canton,O. R2
16	48	Gadsden,Ala. R2
16	48	IndianaHarbor,Ind. I-2
16	48	Kokomo,Ind. C16
16	48	MartinsFerry,O. W10
16	48	Newport,Ky. N9
16	48	Niles,O. N12
16	48	Pittsburg,Calif. C11
16	48	SparrowsPoint,Md. B2
16	48	Steubenville,O. W10
16	51	Middletown,O. A10
16	54	Ashland,Ky. A10
16	54	Dravosburg,Pa. U5
16	60	Gary,Ind. U5
17	36	Delphos,O. N16
17	36	Dover,O. R1
17	38	Butler,Pa. A10
17	40	Torrance,Calif. C11
17	42	Fairfield,Ala. T2
17	46	Weirton,W.Va. W6
17	48	Canton,O. R2
17	48	Gadsden,Ala. R2
17	48	IndianaHarbor,Ind. I-2
17	48	Kokomo,Ind. C16
17	48	Newport,Ky. N9
17	48	Niles,O. N12
17	48	SparrowsPoint,Md. B2
17	50	Dravosburg,Pa. U5
17	51	Middletown,O. A10
17	60	Gary,Ind. U5
18	36	Delphos,O. N16
18	36	Dover,O. R1
18	38	Butler,Pa. A10
18	40	Torrance,Calif. C11
18	42	Fairfield,Ala. T2
18	46	Weirton,W.Va. W6
18	48	Canton,O. R2
18	48	Gadsden,Ala. R2
18	48	IndianaHarbor,Ind. I-2
18	48	Kokomo,Ind. C16
18	48	MartinsFerry,O. W10
18	48	Newport,Ky. N9
18	48	Niles,O. N12
18	48	Pittsburg,Calif. C11
18	48	SparrowsPoint,Md. B2
18	48	Steubenville,O. W10
18	50	Dravosburg,Pa. U5
18	51	Middletown,O. A10
18	60	Gary,Ind. U5
19	36	Delphos,O. N16
19	36	Dover,O. R1
19	36	MartinsFerry,O. W10
19	36	Torrance,Calif. C11
19	38	Butler,Pa. A10
19	42	Fairfield,Ala. T2
19	46	Weirton,W.Va. W6
19	48	Canton,O. R2
19	48	Gadsden,Ala. R2
19	48	IndianaHarbor,Ind. I-2
19	48	Kokomo,Ind. C16
19	48	Newport,Ky. N9
19	48	Niles,O. N12
19	48	Pittsburg,Calif. C11
19	48	SparrowsPoint,Md. B2
19	50	Dravosburg,Pa. U5
19	51	Middletown,O. A10
19	60	Gary,Ind. U5
20	36	Delphos,O. N16
20	36	Dover,O. R1
20	36	Torrance,Calif. C11
20	38	Butler,Pa. A10
20	42	Fairfield,Ala. T2
20	46	Weirton,W.Va. W6
20	48	Canton,O. R2
20	48	Dravosburg,Pa. U5
20	48	Gadsden,Ala. R2
20	48	IndianaHarbor,Ind. I-2
20	48	Kokomo,Ind. C16
20	48	MartinsFerry,O. W10
20	48	Newport,Ky. N9
20	48	Niles,O. N12
20	48	Pittsburg,Calif. C11
20	48	SparrowsPoint,Md. B2
20	48	Steubenville,O. W10
20	51	Middletown,O. A10
20	54	Gary,Ind. U5
21	36	Delphos,O. N16
21	36	Dover,O. R1
21	36	MartinsFerry,O. W10
21	38	Butler,Pa. A10
21	42	Fairfield,Ala. T2
21	46	Weirton,W.Va. W6
21	48	Canton,O. R2
21	48	Dravosburg,Pa. U5
21	48	IndianaHarbor,Ind. I-2
21	48	Kokomo,Ind. C16
21	48	Newport,Ky. N9
21	48	Niles,O. N12
21	48	Pittsburg,Calif. C11
21	48	SparrowsPoint,Md. B2
21	51	Middletown,O. A10
21	54	Gary,Ind. U5
22	36	Delphos,O. N16
22	36	Dover,O. R1
22	38	Butler,Pa. A10
22	42	Fairfield,Ala. T2
22	46	Weirton,W.Va. W6
22	48	Canton,O. R2
22	48	Dravosburg,Pa. U5
22	48	Gadsden,Ala. R2
22	48	Gary,Ind. U5
22	48	IndianaHarbor,Ind. I-2
22	48	Kokomo,Ind. C16
22	48	MartinsFerry,O. W10
22	48	Middletown,O. A10
22	48	Newport,Ky. N9
22	48	Niles,O. N12
22	48	Pittsburg,Calif. C11
22	48	SparrowsPoint,Md. B2
22	48	Steubenville,O. W10
23	36	Delphos,O. N16
23	36	Dover,O. R1
23	36	MartinsFerry,O. W10
23	38	Butler,Pa. A10
23	42	Fairfield,Ala. T2
23	42	Weirton,W.Va. W6
23	48	Canton,O. R2
23	48	Dravosburg,Pa. U5
23	48	Gadsden,Ala. R2
23	48	Gary,Ind. U5
23	48	Middletown,O. A10
23	48	Newport,Ky. N9
23	48	Niles,O. N12
23	48	Pittsburg,Calif. C11
23	48	SparrowsPoint,Md. B2
24	36	Delphos,O. N16
24	36	Dover,O. R1
24	36	IndianaHarbor,Ind. I-2
24	38	Butler,Pa. A10
24	42	Fairfield,Ala. T2
24	42	Weirton,W.Va. W6
24	48	Canton,O. R2
24	48	Dravosburg,Pa. U5
24	48	Gadsden,Ala. R2
24	48	Gary,Ind. U5
24	48	Kokomo,Ind. C16
24	48	MartinsFerry,O. W10
24	48	Middletown,O. A10
24	48	Newport,Ky. N9
24	48	Niles,O. N12
24	48	Pittsburg,Calif. C11
24	48	SparrowsPoint,Md. B2
24	48	Steubenville,O. W10
25	36	Delphos,O. N16
25	36	Dover,O. R1
25	36	Dravosburg,Pa. U5
25	36	MartinsFerry,O. W10
25	36	Niles,O. N12
25	38	Butler,Pa. A10
25	38	Weirton,W.Va. W6
25	42	Fairfield,Ala. T2
25	42	Newport,Ky. N9
25	42	Pittsburg,Calif. C11
25	48	Canton,O. R2
25	48	Gary,Ind. U5
25	48	Middletown,O. A10
25	48	SparrowsPoint,Md. B2
26	36	Delphos,O. N16
26	36	Dover,O. R1
26	36	Dravosburg,Pa. U5
26	36	IndianaHarbor,Ind. I-2
26	36	Kokomo,Ind. C16
26	36	MartinsFerry,O. W10
26	36	Steubenville,O. W10
26	38	Butler,Pa. A10
26	38	Weirton,W.Va. W6
26	40	Gadsden,Ala. R2
26	42	Fairfield,Ala. T2
26	42	Gary,Ind. U5
26	42	Newport,Ky. N9
26	42	Pittsburg,Calif. C11
26	48	Canton,O. R2
26	48	Middletown,O. A10
26	48	Niles,O. N12
26	48	SparrowsPoint,Md. B2
27	36	Delphos,O. N16
27	36	Dover,O. R1
27	36	Dravosburg,Pa. U5
27	36	Gadsden,Ala. R2
27	36	MartinsFerry,O. W10
27	36	Middletown,O. A10
27	36	Niles,O. N12
27	36	Pittsburg,Calif. C11
27	38	Butler,Pa. A10
27	38	Weirton,W.Va. W6
27	40	SparrowsPoint,Md. B2
27	41	Fairfield,Ala. T2
27	42	Gary,Ind. U5
27	42	Newport,Ky. N9
27	48	Canton,O. R2
28	30	IndianaHarbor,Ind. I-2
28	36	Canton,O. R2
28	36	Delphos,O. N16
28	36	Dover,O. R1
28	36	Dravosburg,Pa. U5
28	36	Gadsden,Ala. R2
28	36	Kokomo,Ind. C16
28	36	MartinsFerry,O. W10
28	36	Middletown,O. A10
28	36	Niles,O. N12
28	36	Pittsburg,Calif. C11
28	36	Steubenville,O. W10
28	38	Butler,Pa. A10
28	38	Weirton,W.Va. W6
28	40	SparrowsPoint,Md. B2
28	41	Fairfield,Ala. T2
28	42	Gary,Ind. U5
28	42	Newport,Ky. N9
28	48	Canton,O. R2
29	30	IndianaHarbor,Ind. I-2
29	36	Canton,O. R2
29	36	Delphos,O. N16
29	36	Dover,O. R1
29	36	Dravosburg,Pa. U5
29	36	Gadsden,Ala. R2
29	36	MartinsFerry,O. W10
29	36	Newport,Ky. N9
29	36	Niles,O. N12
29	36	Pittsburg,Calif. C11
29	36	Steubenville,O. W10
29	38	Weirton,W.Va. W6
29	40	SparrowsPoint,Md. B2
29	41	Fairfield,Ala. T2
29	Check with mill for widths	Gary,Ind. U5
30	30	IndianaHarbor,Ind. I-2
30	36	Canton,O. R2
30	36	Delphos,O. N16
30	36	Dover,O. R1
30	36	Dravosburg,Pa. U5
30	36	Gadsden,Ala. R2
30	36	Kokomo,Ind. C16
30	36	MartinsFerry,O. W10
30	36	Newport,Ky. N9
30	36	Niles,O. N12
30	36	Pittsburg,Calif. C11
30	36	Steubenville,O. W10
30	38	Weirton,W.Va. W6
30	40	SparrowsPoint,Md. B2
30	41	Fairfield,Ala. T2

Galvannealed (carbon) Cut Lengths

Galv. Sheet Gage	Max. Width (in.)	Mill Point, Producer
10	48	Kokomo,Ind. C16
11	48	Kokomo,Ind. C16
12	36	Canton,O. R2
12	48	Dravosburg,Pa. U5
12	48	Kokomo,Ind. C16
13	36	Canton,O. R2
13	48	Dravosburg,Pa. U5
14	48	Canton,O. R2
14	48	Dravosburg,Pa. U5
14	48	Kokomo,Ind. C16
14	48	Newport,Ky. N9
14	48	Niles,O. N12
15	48	Canton,O. R2
15	48	Dravosburg,Pa. U5
15	48	Kokomo,Ind. C16
15	48	Newport,Ky. N9
15	48	Niles,O. N12
16	48	Canton,O. R2
16	48	Dravosburg,Pa. U5
16	48	Kokomo,Ind. C16
16	48	Newport,Ky. N9
16	48	Niles,O. N12
17	48	Dravosburg,Pa. U5
17	48	Kokomo,Ind. C16
17	48	Newport,Ky. N9
17	48	Niles,O. N12
17	50	Canton,O. R2
18	48	Dravosburg,Pa. U5
18	48	Kokomo,Ind. C16
18	48	Newport,Ky. N9
18	48	Niles,O. N12
18	50	Canton,O. R2
19	48	Dravosburg,Pa. U5
19	48	Kokomo,Ind. C16
19	48	Newport,Ky. N9
19	48	Niles,O. N12
19	50	Canton,O. R2
20	48	Dravosburg,Pa. U5
20	48	Kokomo,Ind. C16
20	48	Newport,Ky. N9
20	48	Niles,O. N12
20	50	Canton,O. R2
21	48	Canton,O. R2
21	48	Dravosburg,Pa. U5
21	48	Kokomo,Ind. C16
21	48	Newport,Ky. N9
21	48	Niles,O. N12
22	48	Canton,O. R2
22	48	Dravosburg,Pa. U5
22	48	Kokomo,Ind. C16
22	48	Newport,Ky. N9
22	48	Niles,O. N12
23	48	Canton,O. R2
23	48	Dravosburg,Pa. U5
23	48	Newport,Ky. N9
23	48	Niles,O. N12
24	48	Canton,O. R2
24	48	Dravosburg,Pa. U5
24	48	Kokomo,Ind. C16
24	48	Newport,Ky. N9
24	48	Niles,O. N12
25	36	Dravosburg,Pa. U5
25	36	Niles,O. N12
25	42	Newport,Ky. N9
25	48	Canton,O. R2
26	36	Dravosburg,Pa. U5
26	36	Kokomo,Ind. C16
26	42	Newport,Ky. N9
26	48	Canton,O. R2
26	48	Niles,O. N12
27 and lighter for widths	Check with mill	Dravosburg,Pa. U5
27	36	Niles,O. N12
27	42	Newport,Ky. N9
27	48	Canton,O. R2
28	36	Kokomo,Ind. C16
28	36	Newport,Ky. N9
28	36	Niles,O. N12
28	42	Canton,O. R2
29	36	Canton,O. R2
29	36	Niles,O. N12
30	36	Canton,O. R2
30	36	Niles,O. N12

SHEETS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Sheets, Specialties

Galvanized (high-strength)

Mill Point	Producer
Dravosburg,Pa.	U5
Kokomo,Ind.	C16

Galvanized, Hot-Dipped (commercially pure iron)

Mill Point	Producer
Ashland,Ky.	A10
Butler,Pa.	A10
Canton,O.	R2
MartinsFerry,O.	W10
Middletown,O.	A10
Newport,Ky.	N9
Steubenville,O.	W10

Abrasion Resistant, Hot-Rolled

Mill Point	Producer
Dravosburg,Pa.	U5
Gary,Ind.	U5
Munhall,Pa.	U5
Youngstown	U5
Youngstown	Y1

Aluminum Coated

Mill Point	Producer
Butler,Pa.	A10

Blued Stock

Mill Point	Producer
Follansbee,W.Va.	F4
Yorkville,O.	W10

Commercially Pure Iron, Hot-Rolled

Mill Point	Producer
Ashland,Ky.	A10
Cleveland	R2
Newport,Ky.	N9

Commercially Pure Iron, Cold-Rolled

Mill Point	Producer
Cleveland	R2
Middletown,O.	A10

Corrugated Culvert (pure iron)

Mill Point	Producer
Fairfield,Ala.	T2
Gary,Ind.	U5
IndianaHarbor,Ind.	I-2
Newport,Ky.	N9

Corrugated Culvert (copper iron)

Mill Point	Producer
Ashland,Ky.	A10
Canton,O.	R2
Fairfield,Ala.	T2
Gary,Ind.	U5
IndianaHarbor,Ind.	I-2
Newport,Ky.	N9

Corrugated Culvert (copper-bearing)

Mill Point	Producer
Ashland,Ky.	A10
Canton,O.	R2
Dravosburg,Pa.	U5
Fairfield,Ala.	T2
Gadsden,Ala.	R2
Gary,Ind.	U5
IndianaHarbor,Ind.	I-2
Kokomo,Ind.	C16
Newport,Ky.	N9
Pittsburg,Calif.	C11
SparrowsPoint,Md.	B2
Torrance,Calif.	C11

Electrolytically Coated

Mill Point	Producer
Cleveland	R2
Fontana,Calif.	K1
Niles,O.	R2
Weirton,W.Va.	W6

Enameling, Hot-Rolled

Mill Point	Producer
Ashland,Ky.	A10
Cleveland	R2
Dravosburg,Pa.	U5
Gary,Ind.	U5
IndianaHarbor,Ind.	I-2
Niles,O.	N12

Enameling, Cold-Rolled

Mill Point	Producer
Dravosburg,Pa.	U5
Gary,Ind.	U5
GraniteCity,Ill.	G4
IndianaHarbor,Ind.	I-2
Middletown,O.	A10
Youngstown	Y1

Long Ternes

Mill Point	Producer
BeechBottom,W.Va.	W10
Gary,Ind.	U5
Mansfield,O.	E6
Middletown,O.	A10
Niles,O.	N12
Weirton,W.Va.	W6

Long Ternes (commercially pure iron)

Mill Point	Producer
Middletown,O.	A10

STRIP

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Hot-Rolled (carbon) Coils

Thickness (inches)	Widths Min.-Max. (inches)	Mill Point, Producer
.025	1½-2	Fairfield,Ala. T2
.025-.50	⅝-6	Riverdale,Ill. A1
.0255-.2030	1½-3 1/16	Youngstown U5
.028	1½-2 7/16	Fairfield,Ala. T2
.0280-.2030	⅝-4 4/4	Youngstown U5
.0280-.2030	3 9/16-3 5/8	Youngstown U5
.032	¾-2 7/16	Fairfield,Ala. T2
.035	¾-2 5/8	Atlanta A11
.035-.058	¾-3	Fairfield,Ala. T2
.035-.062	up to 10	WestLeechburg,Pa. A4
.035-.065	1-2	Birmingham C15
.035-.203	½-1¼	Sharon,Pa. S3
.035-.203	3 4/4-3 12/16	Youngstown U5
.035-.244	1-4½	Cleveland A7
.041-.0429	½-5	Weirton,W.Va. W6
.042	1 4/4-2	Atlanta A11
.042-.203	1 7/8-3	Sharon,Pa. S3
.042-.203	3 4/4-4 ½	Youngstown U5
.042-.2299	½-5½	Alton,Ill. L1
.043-.0449	½-5½	Weirton,W.Va. W6
.044-.087	2-12	IndianaHarbor,Ind. I-2
.0449-.0821	2¼-12	IndianaHarbor,Ind. Y1
.0449-.0971	4¾-12	Fairfield,Ala. T2
.045-.0469	½-6	Weirton,W.Va. W6
.047-.0489	½-6½	Weirton,W.Va. W6
.048-.203	over 3-4	Warren,O. R2
.048-.203	4½-6	Warren,O. R2
.048-.2299	over 6-10	Warren,O. R2
.049	1 4/4-2½	Atlanta A11
.049-.0509	½-7	Weirton,W.Va. W6
.049-.203	½-12	Sharon,Pa. S3
.049-.203	4 8/4-5	Youngstown U5
.049-.2299	½-6	Alton,Ill. L1
.050-.2299	over 10-11	Warren,O. R2
.050-.250	1½-12	Bridgeport,Conn. S15
.051-.0529	½-7½	Weirton,W.Va. W6
.052-.203	over 1¼-3	Warren,O. R2
.052-.203	over 4-4½	Warren,O. R2
.053-.0589	½-8	Weirton,W.Va. W6
.0568-.0635	4-4½	Fairfield,Ala. T2
.0568-.187	2-12	Allenport,Pa. P7
.0568-.203	12-14	Sharon,Pa. S3
.0568-.2299	6-12	Riverdale,Ill. A1
.058	⅝-2½	Atlanta A11
.058-.203	5 4/4-6	Youngstown U5
.059-.0609	½-10	Weirton,W.Va. W6
.059-.187	1-12	Conshohocken,Pa. A3
.059-.203	¾-12	Detroit M1
.059-.229	6-12	Trenton,Mich. M1
.0598-.125	1-12	Ecorse,Mich. G5
.061-.0629	½-11	Weirton,W.Va. W6
.0620-.2030	over 1-6	Gary,Ind. U5
.0620-.2299	over 6-7½	Gary,Ind. U5
.0620-.2299	over 10-12	Gary,Ind. U5
.0620-.2299	over 11-12	Warren,O. R2
.0625	⅝-2⅝	Atlanta A11
.063-.1259	½-12	Weirton,W.Va. W6
.0636-.203	14-16	Sharon,Pa. S2
.065	⅝-3	Atlanta A11
.065-.072	¾-3½	Fairfield,Ala. T2
.065-.203	½-3 3/8	Youngstown U5
.065-.2299	½-7½	Alton,Ill. L1
.065-.2299	6 4/4-8	Youngstown U5
.072	⅝-3	Atlanta A11
.072-.2299	8 4/4-9	Youngstown U5
.0747-.1259	3-12	Lackawanna,N.Y. B2
.0747-.1875	2-12	Portsmouth,O. D2
.0747-.1875	3-12	SparrowsPoint,Md. B2
.075-.203	16-18	Sharon,Pa. S3
.0822-.0971	3-12	IndianaHarbor,Ind. Y1
.0822-.203	18-20	Sharon,Pa. S3
.083	⅝-3	Atlanta A11
.083-.134	¾-4	Fairfield,Ala. T2
.083-.203	over ⅞-1¼	Warren,O. R2
.083-.2299	¾-8½	Alton,Ill. L1
.083-.2299	over 7½-8	Gary,Ind. U5
.088-.161	3 1/16-12	IndianaHarbor,Ind. I-2
.095	⅝-3	Atlanta A11
.095-.203	20-22	Sharon,Pa. S3
.0972-.1120	4½-12	IndianaHarbor,Ind. Y1
.104-.203	5¼-6	Fontana,Calif. K1
.104-.2299	6⅛-12	Fontana,Calif. K1
.1046-.190	4-12	Economy,Pa. B14
.1046-.2030	⅝-1	Gary,Ind. U5
.109	½-4	Atlanta A11
.109	1¼-2⅝	Torrance,Calif. C11
.109	2⅝	Pittsburg,Calif. C11
.109-.140	⅝-1¾	Buffalo R2
.109-.187	⅝	Sharon,Pa. S3
.109-.203	¾-⅞	Warren,O. R2
.109-.2299	½-10	Alton,Ill. L1
.1090-.2299	over 8-8½	Gary,Ind. U5
.1180-.2299	9 4/4-12	Youngstown U5
.120	½-3	Atlanta A11
.125	½-3	Atlanta A11
.125	1¼-4	Torrance,Calif. C11
.125	3	Pittsburg,Calif. C11
.125-.1875	½-1	Johnstown,Pa. B2
.125-.203	¾-3 4/4	Gary,Ind. U5
.125-.203	3-12	Ecorse,Mich. G5
.125-.203	up to 6 incl.	LoneStar,Tex. L6
.1250-.2299	over 8½-8 4/4	Gary,Ind. U5
.126-.1875	6-12	Lackawanna,N.Y. B2
.126-.1879	⅝-12	Weirton,W.Va. W6
.134-.2299	½-12	Alton,Ill. L1
.1340-.2299	over 8 4/4-10	Gary,Ind. U5
.140-.203	½-1¾	Buffalo R2
.162-.2299	4⅝-12	IndianaHarbor,Ind. I-2
.165	1	Torrance,Calif. C11
.1750-.1870	⅝-8 4/4	Gary,Ind. U5
.180	1-2½	Pittsburg,Calif. C11
.180-.203	2-2½	Buffalo R2
.187-.2299	½-14	Alton,Ill. L1
.1875	⅞-4	Torrance,Calif. C11
.1875	1-3	Pittsburg,Calif. C11
.188-.203	2½-12	Weirton,W.Va. W6
.1930-.2030	⅞-3 1/16 4/4	Youngstown U5
.2031-.210	6-12	Weirton,W.Va. W6
.2031-.229	over 6-12	Detroit M1
.2031-.2299	over 6-12	Ecorse,Mich. G5
.2031-.2299	over 6-12	LoneStar,Tex. L6

STRIP

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Hot-Rolled (carbon) Cut Lengths

Thickness (inches)	Widths Min.-Max. (inches)	Mill Point, Producer
.025	1/8-2	Fairfield,Ala. T2
.025-.50	3/8-6	Riverdale,Ill. A1
.0255-.2030	1/2-3 1/2	Youngstown U5
.028	1/8-2 5/8	Fairfield,Ala. T2
.028-.203	3/8-6 1/2	Youngstown U5
.028-.203	3 5/64-3 3/8	Youngstown U5
.032-.109	3/8-2 3/8	Fairfield,Ala. T2
.035	3/8-2 3/8	Atlanta A11
.035-.062	up to 10	WestLeechburg,Pa. A4
.035-.203	1/2-1 1/4	Sharon,Pa. S3
.035-.203	3 1/64-3 1/2	Youngstown U5
.041-.0429	1/2-5	Weirton,W.Va. W6
.042	1/8-2	Atlanta A11
.042-.203	1 7/8-3	Sharon,Pa. S3
.042-.203	3 1/64-4 1/8	Youngstown U5
.042-.2299	1/2-5 1/2	Alton,Ill. L1
.043-.0449	1/2-5 1/2	Weirton,W.Va. W6
.044-.060	2-12	IndianaHarbor,Ind. I-2
.0449-.1875	4-12	Fairfield,Ala. T2
.045-.0469	1/2-6	Weirton,W.Va. W6
.047-.0489	1/2-6 1/2	Weirton,W.Va. W6
.048-.203	1/2-6	Warren,O. R2
.048-.2299	over 6-12	Warren,O. R2
.049	1/8-2 1/2	Atlanta A11
.049-.0509	1/2-7	Weirton,W.Va. W6
.049-.203	3 1/64-12	Sharon,Pa. S3
.049-.203	4 3/64-5	Youngstown U5
.049-.2299	1/2-6	Alton,Ill. L1
.050-.250	1 1/2-12	Bridgeport,Conn. S15
.051-.0529	1/2-7 1/2	Weirton,W.Va. W6
.053-.0589	1/2-8	Weirton,W.Va. W6
.0568-.187	6-12	Allenport,Pa. P7
.0568-.203	12 1/2-14	Sharon,Pa. S3
.0568-.2299	6-12	Riverdale,Ill. A1
.058	3/8-2 1/2	Atlanta A11
.058-.203	5 1/64-6	Youngstown U5
.059-.0609	1/2-10	Weirton,W.Va. W6
.059-.187	1-12	Conshohocken,Pa. A3
.059-.1879	3-7	Ashland,Ky. A10
.059-.203	3/8-12	Detroit M1
.059-.229	6-12	Trenton,Mich. M1
.059-.2299	over 7-12	Ashland,Ky. A10
.0598-.125	1-12	Ecorse,Mich. G6
.061-.0629	1/2-11	Weirton,W.Va. W6
.0620-.2030	over 1-6	Gary,Ind. U5
.0620-.2299	over 6-7 1/2	Gary,Ind. U5
.0620-.2299	over 10-12	Gary,Ind. U5
.0625	3/8-2 5/8	Atlanta A11
.063-.1259	1/2-12	Weirton,W.Va. W6
.0636-.203	14-16	Sharon,Pa. S3
.065	3/8-3	Atlanta A11
.065-.203	1/2-3 3/64	Youngstown U5
.065-.2299	1/2-7 1/2	Alton,Ill. L1
.065-.2299	6 1/64-8	Youngstown U5
.072	3/8-3	Atlanta A11
.072-.2299	8 1/64-9	Youngstown U5
.0747-.1259	3-12	Lackawanna,N.Y. B2
.0747-.1875	3-12	SparrowsPoint,Md. B2
.075-.203	16-18	Sharon,Pa. S3
.081-.164	7-12	IndianaHarbor,Ind. I-2
.0822-.203	18-20	Sharon,Pa. S3
.083	3/8-3	Atlanta A11
.083-.2299	3/8-8 1/2	Alton,Ill. L1
.083-.2299	over 7 1/2-8	Gary,Ind. U5
.095	3/8-3	Atlanta A11
.095-.203	20-22	Sharon,Pa. S3
.104-.203	5 1/2-6	Fontana,Calif. K1
.104-.2299	6 1/2-12	Fontana,Calif. K1
.1046-.2030	3/8-1	Gary,Ind. U5
.1046-.250	4-12	Economy,Pa. B14
.109	1/2-4	Atlanta A11
.109	1 1/4-2 3/8	Torrance,Calif. C11
.109	2 3/8	Pittsburg,Calif. C11
.109	2 1/2-6	Bessemer,Ala. T2
.109	4 1/2-6	Minnequa,Colo. C10
.109-.140	3/8-1 3/8	Buffalo R2
.109-.187	3/8	Sharon,Pa. S3
.109-.1875	3/8-1 1/2	SouthSanFrancisco B3
.109-.1875	1 1/4-1 1/2	Seattle B3
.109-.2299	1/2-10	Alton,Ill. L1
.109-.2299	over 8-8 1/2	Gary,Ind. U5
.1093	3/8-2 1/2	KansasCity,Mo. S5
.1180-.2299	9 1/64-12	Youngstown U5
.120	1/2-4	Atlanta A11
.120	2 1/2-6	Bessemer,Ala. T2
.120-.134	3/8-1 1/2	Fairfield,Ala. T2
.125	1/2-4	Atlanta A11
.125	3/8-2 1/8	Minnequa,Colo. C10
.125	3/8-3	KansasCity,Mo. S5
.125	1-1 1/4	Birmingham C15
.125	1 1/4-2	Milton,Pa. M19
.125	1 1/4-4	Torrance,Calif. C11
.125	2-6	Bessemer,Ala. T2
.125	3	Pittsburg,Calif. C11
.125	4-10	Minnequa,Colo. C10
.125-.140	2-3 1/8	Buffalo R2
.125-.1875	1/2-1	Johnstown,Pa. B2
.125-.1875	3/8-2	Houston S5
.125-.1875	3/8-4	Joliet,Ill. P22
.125-.1875	1 3/8-4	Seattle B3
.125-.1875	1 3/8-4	SouthSanFrancisco B3
.125-.1875	2 1/2-4	LosAngeles B3
.125-.203	3/8-3 1/64	Gary,Ind. U5
.125-.203	3-12	Ecorse,Mich. G5
.125-.203	up to 6 incl	LoneStar,Tex. L6
.125-.2299	over 8 1/2-8 1/2	Gary,Ind. U5
.126-.1875	6-12	Lackawanna,N.Y. B2
.126-.1879	3/8-12	Weirton,W.Va. W6
.134	1/2-4	Atlanta A11
.134	3/8-2 1/8	Minnequa,Colo. C10
.134	2 1/8-6	Bessemer,Ala. T2
.134	4-10	Minnequa,Colo. C10
.134-.2299	1/2-12	Alton,Ill. L1
.134-.2299	over 8 1/2-10	Gary,Ind. U5
.140-.203	1/2-1 3/4	Buffalo R2
.140-.203	2-3 1/2	Buffalo R2
.1406	3/8-2 1/2	KansasCity,Mo. S5
.148	1/2-4	Atlanta A11
.148	2 1/4-6	Bessemer,Ala. T2
.156	1/2-4	Atlanta A11
.165	1/2-4	Atlanta A11
.165	1	Torrance,Calif. C11
.1750-.1870	3/8-4 7/64	Gary,Ind. U5
.180	1/2-4	Atlanta A11
.180	1-2 1/2	Pittsburg,Calif. C11
.180	1 1/2-2 1/4	Bessemer,Ala. T2
.180	1 1/2-4 1/2	Niles,Calif. P1
.180-.203	2-2 1/2	Buffalo R2
.187-.203	3/8-3 1/2	Gadsden,Ala. R2
.187-.2299	1/2-14	Alton,Ill. L1
.1875	1/2-4	Atlanta A11
.1875	3/8-2 1/4	Minnequa,Colo. C10
.1875	3/8-4	KansasCity,Mo. S5
.1875	3/8-12	Bessemer,Ala. T2
.1875	3/8-4	Torrance,Calif. C11
.1875	1	Seattle B3
.1875	1-2	Fairfield,Ala. T2
.1875	1-2	Milton,Pa. M18
.1875	1-2 1/2	Birmingham C15
.1875	1-3	Pittsburg,Calif. C11
.1875	1 1/2-3 1/2	Sterling,Ill. N15
.1875	2 1/2-3 3/4	Minnequa,Colo. C10
.1875	4-10	Minnequa,Colo. C10
.1875 minimum	1-12	SouthChicago,Ill. W14
.188-.203	2 1/2-12	Weirton,W.Va. W6
.1930-.2030	7/16-3 1/64	Youngstown U5
.2031-.229	over 6-12	Detroit M1
.2031-.2299	6-12	Weirton,W.Va. W6
.2031-.2299	over 6-12	Ecorse,Mich. G5
.2031-.2299	over 6-12	LoneStar,Tex. L6
Check with mill for sizes.		IndianaHarbor,Ind. Y1

Hot-Rolled (alloy) Coils

.0255-.2030	3/8-3 1/8	Youngstown U5
.0280-.2030	3/8-3 1/2	Youngstown U5
.0280-.2030	3 3/64-3 3/8	Youngstown U5
.035-.203	1/2-1 1/4	Sharon,Pa. S3
.035-.203	3 1/64-3 1/2	Youngstown U5
.042-.203	1 7/8-3	Sharon,Pa. S3
.042-.203	3 1/64-4 1/8	Youngstown U5
.049-.203	1/2-12	Sharon,Pa. S3
.049-.203	4 3/64-5	Youngstown U5
.0568-.203	12-14	Sharon,Pa. S3
.0580-.2030	5 1/64-6	Youngstown U5
.059-.135	1-12	Conshohocken,Pa. A3
.0620-.2030	over 1-6	Gary,Ind. U5
.0620-.2299	over 6-7 1/2	Gary,Ind. U5
.0620-.2299	over 10-12	Gary,Ind. U5
.0636-.203	14-16	Sharon,Pa. S3
.065-.203	1/2-3 3/64	Youngstown U5
.065-.2299	6 1/64-8	Youngstown U5
.072-.2299	8 1/64-9	Youngstown U5
.075-.203	16-18	Sharon,Pa. S3
.0822-.203	18-20	Sharon,Pa. S3
.0830-.2299	over 7 1/2-8	Gary,Ind. U5
.090-.156	7-12	Carnegie,Pa. S18
.095-.203	20-22	Sharon,Pa. S3
.1046-.2030	3/8-1	Gary,Ind. U5
.109-.187	3/8	Sharon,Pa. S3
.1090-.2299	over 8-8 1/2	Gary,Ind. U5
.1180-.2299	9 1/64-12	Youngstown U5
.1250-.2030	3/8-3 1/64	Gary,Ind. U5
.1250-.2299	over 8 1/2-8 1/2	Gary,Ind. U5
.134-.190	4-12	Economy,Pa. B14
.1340-.2299	over 8 1/2-10	Gary,Ind. U5
.1750-.1870	3/8-4 7/64	Gary,Ind. U5
.1930-.2030	7/16-3 1/64	Youngstown U5

Hot-Rolled (alloy) Cut Lengths

Thickness (inches)	Widths Min.-Max. (inches)	Mill Point, Producer
.0255-.2030	3/8-3 1/8	Youngstown U5
.0280-.2030	3/8-3 1/2	Youngstown U5
.0280-.2030	3 3/64-3 3/8	Youngstown U5
.035-.203	1/2-1 1/4	Sharon,Pa. S3
.035-.203	3 1/64-3 1/2	Youngstown U5
.042-.203	1 7/8-3	Sharon,Pa. S3
.042-.203	3 1/64-4 1/8	Youngstown U5
.049-.203	3 1/64-12	Sharon,Pa. S3
.049-.203	4 3/64-5	Youngstown U5
.0568-.203	12 1/2-14	Sharon,Pa. S3
.0580-.2030	5 1/64-6	Youngstown U5
.059-.187	1-12	Conshohocken,Pa. A3
.0620-.2030	over 1-6	Gary,Ind. U5
.0620-.2299	over 6-7 1/2	Gary,Ind. U5
.0620-.2299	over 10-12	Gary,Ind. U5
.0636-.203	14-16	Sharon,Pa. S3
.0650-.2030	1/2-3 3/64	Youngstown U5
.065-.2299	6 1/64-8	Youngstown U5
.072-.2299	8 1/64-9	Youngstown U5
.075-.203	16-18	Sharon,Pa. S3
.0822-.203	18-20	Sharon,Pa. S3
.0830-.2299	over 7 1/2-8	Gary,Ind. U5
.090-.156	7-12	Carnegie,Pa. S18
.095-.203	20-22	Sharon,Pa. S3
.1046-.2030	3/8-1	Gary,Ind. U5
.109-.187	3/8	Sharon,Pa. S3
.1090-.2299	over 8-8 1/2	Gary,Ind. U5
.1180-.2299	9 1/64-12	Youngstown U5
.125-.1875	3/8-2	Houston S5
.1250-.2030	3/8-3 1/64	Gary,Ind. U5
.1250-.2299	over 8 1/2-8 1/2	Gary,Ind. U5
.1340-.2299	over 8 1/2-10	Gary,Ind. U5
.134-.250	4-12	Economy,Pa. B14
.1750-.1870	3/8-4 7/64	Gary,Ind. U5
.1930-.2030	7/16-3 1/64	Youngstown U5

STRIP

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Hot-Rolled (high-strength) Coils

Thickness (inches)	Widths Min.-Max. (inches)	Mill Point, Producer
.025-.3125	⅝-6	Riverdale,Ill. A1
.035	⅝-2⅝	Atlanta A11
.035-.203	½-1¼	Sharon,Pa. S3
.042	1/16-2	Atlanta A11
.042-.203	1 7/8-3	Sharon,Pa. S3
.049	1/16-2½	Atlanta A11
.049-.203	⅝-12	Sharon,Pa. S3
.0568-.203	12-14	Sharon,Pa. S3
.0568-.2299	6-12	Riverdale,Ill. A1
.058	⅝-2½	Atlanta A11
.059-.135	1-12	Conshohocken,Pa. A3
.062-.0719	½-6¼	Weirton,W.Va. W6
.0625	⅝-2⅝	Atlanta A11
.0636-.203	14-16	Sharon,Pa. S3
.065	⅝-3	Atlanta A11
.071-.112	2¼-12	IndianaHarbor,Ind.Y1
.0710-.2030	⅝-2	Youngstown U5
.0710-.2030	1 1/4-8	Gary,Ind. U5
.0710-.2299	6 1/4-7½	Gary,Ind. U5
.0710-.2299	10 1/4-12	Gary,Ind. U5
.072	⅝-3	Atlanta A11
.072-.0829	½-7¼	Weirton,W.Va. W6
.075-.125	1-12	Ecorse,Mich. G5
.075-.203	16-18	Sharon,Pa. S3
.0820-.2299	7 3/4-8	Gary,Ind. U5
.0822-.203	18-20	Sharon,Pa. S3
.083	⅝-3	Atlanta A11
.083-.0899	½-9	Weirton,W.Va. W6
.0831-.2030	2 1/4-6	Youngstown U5
.0831-.2299	6 1/4-8	Youngstown U5
.090-.1879	⅝-12	Weirton,W.Va. W6
.095	⅝-3	Atlanta A11
.095-.203	20-22	Sharon,Pa. S3
.1046-.2030	⅞-1	Gary,Ind. U5
.109	½-4	Atlanta A11
.109-.187	⅝	Sharon,Pa. S3
.109-.1875	⅝-1⅛	SouthSanFrancisco B3
.109-.1875	1¼-1½	Seattle B3
.1090-.2299	8 1/4-8½	Gary,Ind. U5
.1099-.2299	8 1/4-12	Youngstown U5
.120	½-4	Atlanta A11
.125	½-4	Atlanta A11
.125-.133	1-12	IndianaHarbor,Ind. I-2
.125-.1875	1⅜-4	Seattle B3
.125-.1875	1⅜-4	SouthSanFrancisco B3
.125-.1875	2½-4	LosAngeles B3
.095-.203	20-22	Sharon,Pa. S3
.1046-.2030	⅞-1	Gary,Ind. U5
.109-.187	⅝	Sharon,Pa. S3
.1090-.2299	8 1/4-8½	Gary,Ind. U5
.1099-.2299	8 1/4-12	Youngstown U5
.120	½-3	Atlanta A11
.125	½-3	Atlanta A11
.125-.203	¾-3 3/8	Gary,Ind. U5
.125-.203	3-12	Ecorse,Mich. G5
.1250-.2299	8 3/4-8 1/8	Gary,Ind. U5
.1340-.2299	8 1/4-10	Gary,Ind. U5
.1750-.1870	⅝-4 7/8	Gary,Ind. U5
.188-.203	2½-12	Weirton,W.Va. W6
.2031-.229	6-12	Weirton,W.Va. W6
.2031-.2299	over 6-12	Ecorse,Mich. G5
Check with mill for sizes		IndianaHarbor,Ind. I-2

Hot-Rolled (high-strength) Cut Lengths

Thickness (inches)	Widths Min.-Max. (inches)	Mill Point, Producer
.025-.3125	⅝-6	Riverdale,Ill. A1
.035	⅝-2⅝	Atlanta A11
.035-.203	½-1¼	Sharon,Pa. S3
.042	1/16-2	Atlanta A11
.042-.203	1 7/8-3	Sharon,Pa. S3
.049	1/16-2½	Atlanta A11
.049-.203	3⅛-12	Sharon,Pa. S3
.0568-.203	12½-14	Sharon,Pa. S3
.0568-.2299	6-12	Riverdale,Ill. A1
.058	⅝-2½	Atlanta A11
.059-.187	1-12	Conshohocken,Pa. A3
.062-.0719	½-6¼	Weirton,W.Va. W6
.0625	⅝-2⅝	Atlanta A11
.0636-.203	14-16	Sharon,Pa. S3
.065	⅝-3	Atlanta A11
.0710-.2030	⅝-2	Youngstown U5
.0710-.2030	1 1/4-6	Gary,Ind. U5
.0710-.2299	6 1/4-7½	Gary,Ind. U5
.0710-.2299	10 1/4-12	Gary,Ind. U5
.072	⅝-3	Atlanta A11
.072-.0829	½-7¼	Weirton,W.Va. W6
.074-.124	3 1/16-12	IndianaHarbor,Ind. I-2
.075-.125	1-12	Ecorse,Mich. G5
.075-.203	16-18	Sharon,Pa. S3
.0820-.2299	7 3/4-8	Gary,Ind. U5
.0822-.203	18-20	Sharon,Pa. S3
.083	⅝-3	Atlanta A11
.083-.0899	½-9	Weirton,W.Va. W6
.0831-.2030	2 1/4-6	Youngstown U5
.0831-.2299	6 1/4-8	Youngstown U5
.090-.1879	⅝-12	Weirton,W.Va. W6
.095	⅝-3	Atlanta A11
.095-.203	20-22	Sharon,Pa. S3
.1046-.2030	⅞-1	Gary,Ind. U5
.109	½-4	Atlanta A11
.109-.187	⅝	Sharon,Pa. S3
.109-.1875	⅝-1⅛	SouthSanFrancisco B3
.109-.1875	1¼-1½	Seattle B3
.1090-.2299	8 1/4-8½	Gary,Ind. U5
.1099-.2299	8 1/4-12	Youngstown U5
.120	½-4	Atlanta A11
.125	½-4	Atlanta A11
.125-.133	1-12	IndianaHarbor,Ind. I-2
.125-.1875	1⅜-4	Seattle B3
.125-.1875	1⅜-4	SouthSanFrancisco B3
.125-.1875	2½-4	LosAngeles B3
.125-.203	¾-3 3/8	Gary,Ind. U5
.125-.203	3-12	Ecorse,Mich. G5
.125-.203	6-12	Fontana,Calif. K1
.1250-.2299	8 3/4-8 1/8	Gary,Ind. U5
.134	½-4	Atlanta A11
.134-.202	1-4½	IndianaHarbor,Ind. I-2
.134-.202	7 1/8-12	IndianaHarbor,Ind. I-2
.1340-.2299	8 1/4-10	Gary,Ind. U5
.148	½-4	Atlanta A11
.156	½-4	Atlanta A11
.165	½-4	Atlanta A11
.1750-.1870	⅝-4 7/8	Gary,Ind. U5
.180	½-4	Atlanta A11
.1875	½-4	Atlanta A11
.1875	1	Seattle B3
.1875	10-12	Fairfield,Ala. T2
.188-.203	2½-12	Weirton,W.Va. W6
.203-.229	7 1/8-12	IndianaHarbor,Ind. I-2
.2031-.229	6-12	Weirton,W.Va. W6
.2031-.2299	over 6-12	Ecorse,Mich. G5
Check with mill for sizes		Ashland,Ky. A10
Check with mill for sizes		IndianaHarbor,Ind. Y1

Cold-Rolled (carbon) Coils

Thickness (inches)	Widths Min.-Max. (inches)	Mill Point, Producer
.001-.004	1/32-8	Indianapolis C18
.001-.004	1/32-18	Youngstown C8
.001-.023	½-23 1/16	NewBedford,Mass. R10
.001-.060	.015-6⅝	Clifton,N.J. A14
.002-.062	1/16-27	Wallingford,Conn. W2
.003-.060	1/32-8	Trenton,N.J. R5
.004-.020	over 8-14	Worcester,Mass. A7
.004-.092	¼-8	Worcester,Mass. A7
.004-.125	1/16-22	Warren,O. P7
.005	2⅝	Buffern,N.Y. A22
.005	13	Bristol,Conn. W1
.005-.085	¼-12	SparrowsPoint,Md. T6
.005-.065	¼-15	Mattapan,Mass. T6
.005-.093	1/32-24	Youngstown C8
.005-.125	1/32-24	Indianapolis C8
.005-.125	½-23 1/16	NewCastle,Pa. E5
.005-.156	⅛-10	Pawtucket,R.I. N8
.005-.187	⅛-12	Bridgeport,Conn. S15
.005-.1875	½-23 1/16	Erie,Pa. G7
.005-.250	⅝-16	NewBritain,Conn. S15
.007	1 1/32	Buffern,N.Y. A22
.008-.0149	½-18½	Weirton,W.Va. W6
.008-.059	⅝-23 1/16	Follansbee,W.Va. F4
.008-.187	1/32-15	Rome,N.Y. R6
.008-.187	1/16-22	Riverdale,Ill. A1
.008-.1875	½-23 1/16	Cleveland A7
.010-.030	⅝-6½	LosAngeles C1
.010-.065	¼-16	FranklinPark,Ill. T6
.010-.125	over 7-23 1/16	Warren,O. R2
.010-.150	over 3½-7	Warren,O. R2
.010-.156	1/16-22	NewHaven,Conn. D2
.010-.156	½-21½	Sharon,Pa. S3
.010-.187	⅝-3½	Warren,O. R2
.010-.1875	1/16-23 1/16	Detroit D2
.0113-.0821	3-12	SparrowsPoint,Md. B2
.0142-.0567	½-12	Middletown,O. A10
.0149-.1196	2-23 1/16	Pittsburgh J5
.015-.025	¼-14	NewCastle,Pa. B4
.015-.0599	½-23 1/16	Weirton,W.Va. W6
.015-.062	½-23 1/16	Detroit M1
.015-.072	up to 12"	SinkingSpring,Pa. H8
.015-.074	1-12	IndianaHarbor,Ind. Y1
.015-.075	½-21	Detroit D3
.015-.090	½-16	Fontana,Calif. K1
.015-.125	¼-23 1/16	Anderson,Ind. G6
.015-.125	¼-23 1/16	Dover,O. G6
.015-.125	½-12	NewKensington,Pa. A6
.0157-.1270	3-12	Lackawanna,N.Y. B2
.0172-.093	1-12	Youngstown Y1
.0179-.1046	2-23 1/16	Cleveland J5
.020	3	Suffern,N.Y. A22
.025-.040	¼-15	NewCastle,Pa. B4
.0255-.125	1-12	Portsmouth,O. D2
.030-.125	½-13¼	LosAngeles C1
.035	2¼-2⅝	Suffern,N.Y. A22
.040 and thinner	6	NewYork W3
.040-.187	½-20	NewCastle,Pa. B4
.0568-.1120	Check with mill for widths	Middletown,O. A10
.060-.1259	⅝-23 1/16	Weirton,W.Va. W6
over .062-.085	⅝-27	Wallingford,Conn. W2
over .075-.100	⅝-21	Detroit D3
over .085-.10	⅛-27	Wallingford,Conn. W2
.093 and under	2-23 1/16	IndianaHarbor,Ind. I-2
over .10-.156	1-21	Detroit D3
over .10-.156	1-27	Wallingford,Conn. W2
.125-.187	2-14	Worcester,Mass. W19
.126-.1309	¾-16½	Weirton,W.Va. W6
.131-.1409	¾-15½	Weirton,W.Va. W6
.141-.1459	¾-13½	Weirton,W.Va. W6
.146-.1509	¾-11½	Weirton,W.Va. W6
.151-.1609	¾-10½	Weirton,W.Va. W6
.161-.1879	3½-7⅝	Weirton,W.Va. W6
.187-.250	1-21	NewCastle,Pa. B4
.188-.2509	3½-6	Weirton,W.Va. W6

STRIP

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Cold-Rolled (carbon) Cut Lengths

Thickness (inches)	Widths Min.-Max. (inches)	Mill Point, Producer
.001–.060	.015–6⅝	Clifton,N.J. A14
.003–.060	1/16–8	Trenton,N.J. R5
.004–.020	over 8–14	Worcester,Mass. A7
.004–.092	¼–8	Worcester,Mass. A7
.005	13	Bristol,Conn. W1
.005–.125	⅝–23⅛	NewCastle,Pa. E5
.005–.187	½–12	Bridgeport,Conn. S15
.005–.250	⅝–16	NewBritain,Conn. S15
.008–.0149	½–18½	Weirton,W.Va. W6
.008–.059	⅝–23⅛	Follansbee,W.Va. F4
.008–.187	1/16–15	Rome,N.Y. R6
.008–.187	½–22	Riverdale,Ill. A1
.008–.187	¼–23⅛	Cleveland A7
.010–.030	⅝–6½	LosAngeles C1
.010–.062	1/16–24	Wallingford,Conn. W2
.010–.093	1–24	Youngstown C8
.010–.125	1/16–22	Warren,O. P7
.010–.125	over 7–23⅛	Warren,O. R2
.010–.150	over 3½–7	Warren,O. R2
.010–.156	1/16–22	NewHaven,Conn. D2
.010–.156	½–21½	Sharon,Pa. S3
.010–.187	⅝–3½	Warren,O. R2
.010–.1875	1/16–23⅛	Detroit D2
.010–.50	⅝–10	Pawtucket,R.I. N8
.0113–.0821	3–12	SparrowsPoint,Md. B2
.013–.065	⅛–10	Mattapan,Mass. T6
.013–.065	⅛–12	SparrowsPoint,Md. T6
.013–.065	⅛–16	FranklinPark,Ill. T6
.013–.1875	½–23⅛	Erie,Pa. G7
.0142–.0567	½–12	Middletown,O. A10
.0149–.1196	2–23⅛	Pittsburgh J5
.015–.025	¼–14	NewCastle,Pa. B4
.015–.0599	½–23⅛	Weirton,W.Va. W6
.015–.062	4–23⅛	Detroit M1
.015–.090	½–16	Fontana,Calif. K1
.015–.125	¼–23⅛	Anderson,Ind. G6
.015–.125	¼–23⅛	Dover,O. G6
.0157–.1270	3–12	Lackawanna,N.Y. B2
.0179–.1046	2–23⅛	Cleveland J5
.020–.075	3–21	Detroit D3
.025–.040	¼–15	NewCastle,Pa. B4
.030–.125	½–13⅛	LosAngeles C1
.040–.187	½–20	NewCastle,Pa. B4
.0568–.1120	Check with mill for widths	Middletown,O. A10
.060–.1259	⅝–23⅛	Weirton,W.Va. W6
over .062–.085	⅝–18	Wallingford,Conn. W2
over .075–.156	1½–21	Detroit D3
over .085–.10	½–12	Wallingford,Conn. W2
.093 and under	2–23⅛	IndianaHarbor,Ind. I-2
over .10–.156	1–9	Wallingford,Conn. W2
.125–.187	2–14	Worcester,Mass. W19
.125–.250	½–12	NewKensington,Pa. A6
.126–.1309	⅝–16½	Weirton,W.Va. W6
.131–.1409	⅝–15½	Weirton,W.Va. W6
.141–.1459	⅝–13½	Weirton,W.Va. W6
.146–.1509	⅝–11½	Weirton,W.Va. W6
.151–.1609	⅝–10½	Weirton,W.Va. W6
.161–.1879	3½–7⅞	Weirton,W.Va. W6
.187–.250	1–21	NewCastle,Pa. B4
.188–.2509	3½–6	Weirton,W.Va. W6

Cold-Rolled (alloy) Coils

.001–.004	1/16–8	Indianapolis C8
.001–.004	1/16–18	Youngstown C8
.002–.062	1/16–27	Wallingford,Conn. W2
.004–.020	over 8–14	Worcester,Mass. A7
.004–.092	¼–8	Worcester,Mass. A7
.004–.125	1/16–18	Warren,O. P7
.005–.093	1/16–24	Youngstown C8
.005–.125	1/16–24	Indianapolis C8
.005–.156	1/16–10	Pawtucket,R.I. N8
.008–.187	¼–23⅛	Cleveland A7
.010–.156	½–21½	Sharon,Pa. S3
.015–.125	¼–23⅛	Dover,O. G6
.020–.095	⅝–12	Carnegie,Pa. S18
.040 and thinner	.6	NewYork W3
over .062–.085	⅝–27	Wallingford,Conn. W2
over .085–.10	½–27	Wallingford,Conn. W2
over .10–.156	1–27	Wallingford,Conn. W2
Check with mill for sizes		Cleveland C7

Cold-Rolled (alloy) Cut Lengths

.004–.020	over 8–14	Worcester,Mass. A7
.004–.092	¼–8	Worcester,Mass. A7
.008–.187	¼–23⅛	Cleveland A7
.010–.062	1/16–24	Wallingford,Conn. W2
.010–.093	1–24	Youngstown C8
.010–.125	1/16–18	Warren,O. P7
.010–.156	½–21½	Sharon,Pa. S3
.010–.50	⅝–10	Pawtucket,R.I. N8
.015–.125	¼–23⅛	Dover,O. G6
.020–.095	⅝–12	Carnegie,Pa. S18
over .062–.085	⅝–18	Wallingford,Conn. W2
over .085–.10	½–12	Wallingford,Conn. W2
over .10–.156	1–9	Wallingford,Conn. W2
Check with mill for sizes		Cleveland C7

Cold-Rolled (high-strength) Coils

.002–.062	1/16–27	Wallingford,Conn. W2
.008–.050	⅛–23⅛	Cleveland A7
.010–.156	½–21½	Sharon,Pa. S3
.015–.074	1–12	IndianaHarbor,Ind. Y1
.015–.075	½–21	Detroit D3
.015–.125	¼–23⅛	Dover,O. G6
.0172–.0821	1–12	Youngstown Y1
.0239–.0897	2–23⅛	Cleveland J5
.0239–.0897	2–23⅛	Pittsburgh J5
.025–.0619	½–23⅛	Weirton,W.Va. W6
.062–.0939	⅝–23⅛	Weirton,W.Va. W6
over .062–.085	⅝–27	Wallingford,Conn. W2
over .075–.10	⅝–21	Detroit D3
over .085–.10	½–27	Wallingford,Conn. W2
.094–.125	⅝–16	Weirton,W.Va. W6
over .10–.156	1–21	Detroit D3
over .10–.156	1–27	Wallingford,Conn. W2
up to .187	up to 25	Riverdale,Ill. A1

Cold-Rolled (high-strength) Cut Lengths

.008–.050	⅛–23⅛	Cleveland A7
.010–.062	1/16–24	Wallingford,Conn. W2
.010–.156	½–21½	Sharon,Pa. S3
.015–.125	¼–23⅛	Dover,O. G6
.020–.075	3–21	Detroit D3
.0239–.0897	2–23⅛	Cleveland J5
.0239–.0897	2–23⅛	Pittsburgh J5
.025–.0619	½–23⅛	Weirton,W.Va. W6
.062–.0939	⅝–23⅛	Weirton,W.Va. W6
over .062–.085	⅝–18	Wallingford,Conn. W2
over .075–.156	1½–21	Detroit D3
over .085–.10	½–12	Wallingford,Conn. W2
.094–.125	⅝–16	Weirton,W.Va. W6
over .10–.156	1–9	Wallingford,Conn. W2
up to .187	up to 25	Riverdale,Ill. A1

Abrasion Resistant, Hot-Rolled

Fairfield,Ala. T2
Gary,Ind. U5
LosAngeles B3
Seattle B3
S.SanFrancisco B3
Youngstown U5

Commercially Pure Iron, H-R

Ashland,Ky. A10
Newport,Ky. N9
Warren,O. R2

Commercially Pure Iron, C-R

Middletown,O. A10
NewKensingtn,Pa. A6
Rome,N.Y. R6
Warren,O. R2

Electrolytically Coated

Cleveland A7
Dover,O. G6
Niles,O. R2
Warren,O. B9
Warren,O. P7
Weirton,W.Va. W6
Youngstown C8

Spring, Tempered, C-F

Bristol,Conn. W1
Cleveland C7
Clifton,N.J. A14
FranklinPark,Ill. T6
Harrison,N.J. C18
NewYork W3
Trenton,N.J. R5
Union,N.J. H6
Worcester,Mass. A7
Youngstown C8

Spring, Annealed, C-F

Bristol,Conn. W1
Carnegie,Pa. S18
Cleveland C7
Clifton,N.J. A14
Dover,O. G6
Harrison,N.J. C18
Indianapolis C8
Mattapan,Mass. T6
NewYork W3
Riverdale,Ill. A1
Rome,N.Y. R6
Sharon,Pa. S3
SparrowsPt,Md. T6
Trenton,N.J. R5
Union,N.J. H6
Warren,O. P7
Warren,O. R2
Weirton,W.Va. W6
Worcester,Mass. A7
Youngstown C8
Youngstown Y1

ELECTRICAL STEEL

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Field Grade, Hot-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
16	40	IndianaHarbor,Ind. I-2
17	40	IndianaHarbor,Ind. I-2
18	40	IndianaHarbor,Ind. I-2
18	42	Mansfield,O. E6
19	40	IndianaHarbor,Ind. I-2
19	42	Mansfield,O. E6
20	40	IndianaHarbor,Ind. I-2
20	42	Mansfield,O. E6
20	42	Newport,Ky. N9
21	40	IndianaHarbor,Ind. I-2
21	42	Mansfield,O. E6
21	42	Newport,Ky. N9
22	36	Niles,O. N12
22	36	Warren,O. R2
22	40	IndianaHarbor,Ind. I-2
22	42	Mansfield,O. E6
22	42	Newport,Ky. N9
23	36	Niles,O. N12
23	36	Warren,O. R2
23	40	IndianaHarbor,Ind. I-2
23	42	Mansfield,O. E6
23	42	Newport,Ky. N9
24	35¾	BeechBttm,W.Va. W10
24	36	Niles,O. N12
24	36	Warren,O. R2
24	40	IndianaHarbor,Ind. I-2
24	42	Mansfield,O. E6
24	42	Newport,Ky. N9
25	35¾	BeechBttm,W.Va. W10
25	36	Niles,O. N12
25	36	Warren,O. R2
25	40	IndianaHarbor,Ind. I-2
25	42	Mansfield,O. E6
25	42	Newport,Ky. N9
26	35¾	BeechBttm,W.Va. W10
26	36	Niles,O. N12
26	36	Warren,O. R2
26	40	IndianaHarbor,Ind. I-2
26	42	Mansfield,O. E6
26	42	Newport,Ky. N9
27	36	Niles,O. N12
27	36	Warren,O. R2
27	40	IndianaHarbor,Ind. I-2
27	42	Mansfield,O. E6
27	42	Newport,Ky. N9
28	36	Newport,Ky. N9
28	36	Niles,O. N12
28	36	Warren,O. R2
28	40	IndianaHarbor,Ind. I-2
28	42	Mansfield,O. E6
29	36	Newport,Ky. N9
29	36	Niles,O. N12
29	36	Warren,O. R2

Field Grade, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
20	40	GraniteCity,Ill. G4
21	40	GraniteCity,Ill. G4
22	10	Warren,O. R2
22	36	IndianaHarbor,Ind. I-2
22	36	Vandergrift,Pa. U5
22	40	GraniteCity,Ill. G4
23	10	Warren,O. R2
23	36	IndianaHarbor,Ind. I-2
23	36	Vandergrift,Pa. U5
24	10	Warren,O. R2
24	36	GraniteCity,Ill. G4
24	36	IndianaHarbor,Ind. I-2
24	36	Vandergrift,Pa. U5
25	10	Warren,O. R2
25	36	GraniteCity,Ill. G4
25	36	IndianaHarbor,Ind. I-2
25	36	Vandergrift,Pa. U5
26	10	Warren,O. R2
26	36	GraniteCity,Ill. G4
26	36	IndianaHarbor,Ind. I-2
26	36	Vandergrift,Pa. U5
27	10	Warren,O. R2
27	36	IndianaHarbor,Ind. I-2
27	36	Vandergrift,Pa. U5
28	10	Warren,O. R2
28	36	IndianaHarbor,Ind. I-2
28	36	Vandergrift,Pa. U5
29	10	Warren,O. R2
29	36	Vandergrift,Pa. U5

Armature Grade, Hot-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
16	40	IndianaHarbor,Ind. I-2
16	48	Vandergrift,Pa. U5
17	40	IndianaHarbor,Ind. I-2
17	48	Vandergrift,Pa. U5
18	36	Zanesville,O. A10
18	40	IndianaHarbor,Ind. I-2
18	42	Mansfield,O. E6
18	48	Vandergrift,Pa. U5
19	36	Zanesville,O. A10
19	40	IndianaHarbor,Ind. I-2
19	42	Mansfield,O. E6
19	48	Vandergrift,Pa. U5
20	36	Zanesville,O. A10
20	40	IndianaHarbor,Ind. I-2
20	42	Mansfield,O. E6
20	42	Newport,Ky. N9
20	48	Vandergrift,Pa. U5
21	36	Zanesville,O. A10
21	40	IndianaHarbor,Ind. I-2
21	42	Mansfield,O. E6
21	42	Newport,Ky. N9
21	48	Vandergrift,Pa. U5
22	36	Niles,O. N12
22	36	Warren,O. R2
22	36	Zanesville,O. A10
22	40	IndianaHarbor,Ind. I-2
22	42	Mansfield,O. E6
22	42	Newport,Ky. N9
22	48	Vandergrift,Pa. U5
23	36	Niles,O. N12
23	36	Warren,O. R2
23	36	Zanesville,O. A10
23	40	IndianaHarbor,Ind. I-2
23	42	Mansfield,O. E6
23	42	Newport,Ky. N9
23	48	Vandergrift,Pa. U5
24	35¾	BeechBttm,W.Va. W10
24	36	Niles,O. N12
24	36	Warren,O. R2
24	36	Zanesville,O. A10
24	40	IndianaHarbor,Ind. I-2
24	42	Mansfield,O. E6
24	42	Newport,Ky. N9
24	48	Vandergrift,Pa. U5
25	35¾	BeechBttm,W.Va. W10
25	36	Niles,O. N12
25	36	Warren,O. R2
25	36	Zanesville,O. A10
25	40	IndianaHarbor,Ind. I-2
25	42	Mansfield,O. E6
25	42	Newport,Ky. N9
25	48	Vandergrift,Pa. U5
26	35¾	BeechBttm,W.Va. W10
26	36	Niles,O. N12
26	36	Warren,O. R2
26	36	Zanesville,O. A10
26	40	IndianaHarbor,Ind. I-2
26	42	Mansfield,O. E6
26	42	Newport,Ky. N9
26	48	Vandergrift,Pa. U5
27	36	Niles,O. N12
27	36	Warren,O. R2
27	36	Zanesville,O. A10
27	40	IndianaHarbor,Ind. I-2
27	42	Mansfield,O. E6
27	42	Newport,Ky. N9
27	44	Vandergrift,Pa. U5
28	36	Newport,Ky. N9
28	36	Niles,O. N12
28	36	Warren,O. R2
28	36	Zanesville,O. A10
28	40	IndianaHarbor,Ind. I-2
28	42	Mansfield,O. E6
28	44	Vandergrift,Pa. U5
29	36	Newport,Ky. N9
29	36	Niles,O. N12
29	36	Warren,O. R2
29	36	Zanesville,O. A10
29	44	Vandergrift,Pa. U5
30	44	Vandergrift,Pa. U5

Armature Grade, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
18	48	Brackenridge,Pa. A4
19	48	Brackenridge,Pa. A4
20	48	Brackenridge,Pa. A4
21	48	Brackenridge,Pa. A4
22	10	Warren,O. R2
22	35¾	GraniteCity,Ill. G4
22	36	IndianaHarbor,Ind. I-2
22	48	Brackenridge,Pa. A4
23	10	Warren,O. R2
23	35¾	GraniteCity,Ill. G4
23	36	IndianaHarbor,Ind. I-2
23	48	Brackenridge,Pa. A4
24	10	Warren,O. R2
24	35¾	GraniteCity,Ill. G4
24	36	IndianaHarbor,Ind. I-2
24	48	Brackenridge,Pa. A4
25	10	Warren,O. R2
25	32	GraniteCity,Ill. G4
25	36	IndianaHarbor,Ind. I-2
25	48	Brackenridge,Pa. A4
26	10	Warren,O. R2
26	32	GraniteCity,Ill. G4
26	36	IndianaHarbor,Ind. I-2
26	48	Brackenridge,Pa. A4
27	10	Warren,O. R2
27	48	Brackenridge,Pa. A4
28	10	Warren,O. R2
28	48	Brackenridge,Pa. A4
29	10	Warren,O. R2
29	48	Brackenridge,Pa. A4

Electrical Grade, Hot-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
16	40	IndianaHarbor,Ind. I-2
16	48	Vandergrift,Pa. U5
17	40	IndianaHarbor,Ind. I-2
17	48	Vandergrift,Pa. U5
18	36	Zanesville,O. A10
18	40	IndianaHarbor,Ind. I-2
18	42	Mansfield,O. E6
18	48	Brackenridge,Pa. A4
18	48	Vandergrift,Pa. U5
19	36	Zanesville,O. A10
19	40	IndianaHarbor,Ind. I-2
19	42	Mansfield,O. E6
19	48	Brackenridge,Pa. A4
19	48	Vandergrift,Pa. U5
20	36	Zanesville,O. A10
20	40	IndianaHarbor,Ind. I-2
20	42	Mansfield,O. E6
20	42	Newport,Ky. N9
20	48	Brackenridge,Pa. A4
20	48	Vandergrift,Pa. U5
21	36	Zanesville,O. A10
21	40	IndianaHarbor,Ind. I-2
21	42	Mansfield,O. E6
21	42	Newport,Ky. N9
21	48	Brackenridge,Pa. A4
21	48	Vandergrift,Pa. U5
22	36	Niles,O. N12
22	36	Warren,O. R2
22	36	Zanesville,O. A10
22	40	IndianaHarbor,Ind. I-2
22	42	Mansfield,O. E6
22	42	Newport,Ky. N9
22	48	Brackenridge,Pa. A4
22	48	Vandergrift,Pa. U5
23	36	Niles,O. N12
23	36	Warren,O. R2
23	36	Zanesville,O. A10
23	40	IndianaHarbor,Ind. I-2
23	42	Mansfield,O. E6
23	42	Newport,Ky. N9
23	48	Brackenridge,Pa. A4
23	48	Vandergrift,Pa. U5
24	35¾	BeechBttm,W.Va. W10
24	36	Niles,O. N12
24	36	Warren,O. R2
24	36	Zanesville,O. A10
24	40	IndianaHarbor,Ind. I-2
24	42	Mansfield,O. E6
24	42	Newport,Ky. N9
24	48	Brackenridge,Pa. A4
24	48	Vandergrift,Pa. U5
25	35¾	BeechBttm,W.Va. W10
25	36	Niles,O. N12
25	36	Warren,O. R2
25	36	Zanesville,O. A10
25	40	IndianaHarbor,Ind. I-2
25	42	Mansfield,O. E6
25	42	Newport,Ky. N9
25	48	Brackenridge,Pa. A4
25	48	Vandergrift,Pa. U5
26	35¾	BeechBttm,W.Va. W10
26	36	Niles,O. N12
26	36	Warren,O. R2
26	36	Zanesville,O. A10
26	40	IndianaHarbor,Ind. I-2
26	42	Mansfield,O. E6
26	42	Newport,Ky. N9
26	48	Brackenridge,Pa. A4
26	48	Vandergrift,Pa. U5
27	35¾	BeechBttm,W.Va. W10
27	36	Niles,O. N12
27	36	Warren,O. R2
27	36	Zanesville,O. A10
27	40	IndianaHarbor,Ind. I-2
27	42	Mansfield,O. E6
27	42	Newport,Ky. N9
27	44	Brackenridge,Pa. A4
27	44	Vandergrift,Pa. U5
28	34½	BeechBttm,W.Va. W10
28	36	Newport,Ky. N9
28	36	Niles,O. N12
28	36	Warren,O. R2
28	36	Zanesville,O. A10
28	40	IndianaHarbor,Ind. I-2
28	42	Mansfield,O. E6
28	44	Brackenridge,Pa. A4
28	44	Vandergrift,Pa. U5
29	34½	BeechBttm,W.Va. W10
29	36	Newport,Ky. N9
29	36	Niles,O. N12
29	36	Warren,O. R2
29	36	Zanesville,O. A10
29	44	Brackenridge,Pa. A4
29	44	Vandergrift,Pa. U5
30	36	Brackenridge,Pa. A4
30	40	Vandergrift,Pa. U5

Electrical Grade, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
18	48	Brackenridge,Pa. A4
19	48	Brackenridge,Pa. A4
20	48	Brackenridge,Pa. A4
21	48	Brackenridge,Pa. A4
22	10	Warren,O. R2
22	34	IndianaHarbor,Ind. I-2
22	35¾	GraniteCity,Ill. G4
22	36	Vandergrift,Pa. U5
22	48	Brackenridge,Pa. A4
23	10	Warren,O. R2
23	34	IndianaHarbor,Ind. I-2
23	35¾	GraniteCity,Ill. G4
23	36	Vandergrift,Pa. U5
23	48	Brackenridge,Pa. A4
24	10	Warren,O. R2
24	34	IndianaHarbor,Ind. I-2
24	35¾	GraniteCity,Ill. G4
24	36	Vandergrift,Pa. U5
24	48	Brackenridge,Pa. A4
25	10	Warren,O. R2
25	34	IndianaHarbor,Ind. I-2
25	35¾	GraniteCity,Ill. G4
25	36	Vandergrift,Pa. U5
25	48	Brackenridge,Pa. A4
26	10	Warren,O. R2
26	32	GraniteCity,Ill. G4
26	34	IndianaHarbor,Ind. I-2
26	36	Vandergrift,Pa. U5
26	48	Brackenridge,Pa. A4
27	10	Warren,O. R2
27	32	GraniteCity,Ill. G4
27	36	Vandergrift,Pa. U5
27	48	Brackenridge,Pa. A4
28	10	Warren,O. R2
28	28	GraniteCity,Ill. G4
28	36	Vandergrift,Pa. U5
28	48	Brackenridge,Pa. A4
29	10	Warren,O. R2
29	28	GraniteCity,Ill. G4
29	36	Vandergrift,Pa. U5
29	48	Brackenridge,Pa. A4

ELECTRICAL STEEL

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Motor Grade, Hot-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
.0070..24		Vandergrift,Pa. U5
.0075..24		Vandergrift,Pa. U5
.0100..24		Vandergrift,Pa. U5
16.....48		Vandergrift,Pa. U5
17.....48		Vandergrift,Pa. U5
18.....36		Zanesville,O. A10
18.....42		Mansfield,O. E6
18.....48		Brackenridge,Pa. A4
18.....48		Vandergrift,Pa. U5
19.....36		Zanesville,O. A10
19.....42		Mansfield,O. E6
19.....48		Brackenridge,Pa. A4
19.....48		Vandergrift, Pa. U5
20.....36		Zanesville,O. A10
20.....42		Mansfield,O. E6
20.....42		Newport,Ky. N9
20.....48		Brackenridge,Pa. A4
20.....48		Vandergrift,Pa. U5
21.....36		Zanesville,O. A10
21.....42		Mansfield,O. E6
21.....42		Newport,Ky. N9
21.....48		Brackenridge,Pa. A4
21.....48		Vandergrift,Pa. U5
22.....36		Niles,O. N12
22.....36		Warren,O. R2
22.....36		Zanesville,O. A10
22.....42		Mansfield,O. E6
22.....42		Newport,Ky. N9
22.....48		Brackenridge,Pa. A4
22.....48		Vandergrift,Pa. U5
23.....36		Niles,O. N12
23.....36		Warren,O. R2
23.....36		Zanesville,O. A10
23.....42		Mansfield,O. E6
23.....42		Newport,Ky. N9
23.....48		Brackenridge,Pa. A4
23.....48		Vandergrift,Pa. U5
24.....35		BeechBottom,W.Va. W10
24.....36		Niles,O. N12
24.....36		Warren,O. R2
24.....36		Zanesville,O. A10
24.....42		Mansfield,O. E6
24.....42		Newport,Ky. N9
24.....48		Brackenridge,Pa. A4
24.....48		Brackenridge,Pa. A4
24.....48		Vandergrift,Pa. U5
25.....35		BeechBottom,W.Va. W10
25.....36		Niles,O. N12
25.....36		Warren,O. R2
25.....36		Zanesville,O. A10
25.....42		Mansfield,O. E6
25.....42		Newport,Ky. N9
25.....48		Brackenridge,Pa. A4
25.....48		Vandergrift,Pa. U5
26.....35		BeechBottom,W.Va. W10
26.....36		Niles,O. N12
26.....36		Warren,O. R2
26.....36		Zanesville,O. A10
26.....42		Mansfield,O. E6
26.....42		Newport,Ky. N9
26.....48		Brackenridge,Pa. A4
26.....48		Vandergrift,Pa. U5
27.....35		BeechBottom,W.Va. W10
27.....36		Niles,O. N12
27.....36		Warren,O. R2
27.....36		Zanesville,O. A10
27.....42		Mansfield,O. E6
27.....42		Newport,Ky. N9
27.....44		Brackenridge,Pa. A4
27.....44		Vandergrift,Pa. U5
28.....34		BeechBottom,W.Va. W10
28.....36		Newport,Ky. N9
28.....36		Niles,O. N12
28.....36		Warren,O. R2
28.....36		Zanesville,O. A10
28.....42		Mansfield,O. E6
28.....44		Brackenridge,Pa. A4
28.....44		Vandergrift,Pa. U5
29.....34		BeechBottom,W.Va. W10
29.....36		Newport,Ky. N9
29.....36		Niles,O. N12
29.....36		Warren,O. R2
29.....36		Zanesville,O. A10
29.....44		Brackenridge,Pa. A4
29.....44		Vandergrift,Pa. U5
30.....36		Brackenridge,Pa. A4
30.....40		Vandergrift,Pa. U5

Motor Grade, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
18.....48		Brackenridge,Pa. A4
19.....48		Brackenridge,Pa. A4
20.....48		Brackenridge,Pa. A4
21.....48		Brackenridge,Pa. A4
22.....10		Warren,O. R2
22.....30		GraniteCity,Ill. G4
22.....36		Vandergrift,Pa. U5
22.....48		Brackenridge,Pa. A4
23.....10		Warren,O. R2
23.....30		GraniteCity,Ill. G4
23.....36		Vandergrift,Pa. U5
23.....48		Brackenridge,Pa. A4
24.....10		Warren,O. R2
24.....30		GraniteCity,Ill. G4
24.....36		Vandergrift,Pa. U5
24.....48		Brackenridge,Pa. A4
25.....10		Warren,O. R2
25.....30		GraniteCity,Ill. G4
25.....36		Vandergrift,Pa. U5
25.....48		Brackenridge,Pa. A4
26.....10		Warren,O. R2
26.....28		GraniteCity,Ill. G4
26.....36		Vandergrift,Pa. U5
26.....48		Brackenridge,Pa. A4
27.....10		Warren,O. R2
27.....28		GraniteCity,Ill. G4
27.....36		Vandergrift,Pa. U5
27.....48		Brackenridge,Pa. A4
28.....10		Warren,O. R2
28.....26		GraniteCity,Ill. G4
28.....36		Vandergrift,Pa. U5
28.....48		Brackenridge,Pa. A4
29.....10		Warren,O. R2
29.....26		GraniteCity,Ill. G4
29.....36		Vandergrift,Pa. U5
29.....48		Brackenridge,Pa. A4

Dynamo Grade, Hot-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
.0070..24		Vandergrift,Pa. U5
.0075..24		Vandergrift,Pa. U5
.0100..24		Vandergrift,Pa. U5
16.....48		Vandergrift,Pa. U5
17.....48		Vandergrift,Pa. U5
18.....36		Zanesville,O. A10
18.....38		Mansfield,O. E6
18.....48		Brackenridge,Pa. A4
18.....48		Vandergrift,Pa. U5
19.....36		Zanesville,O. A10
19.....38		Mansfield,O. E6
19.....48		Brackenridge,Pa. A4
19.....48		Vandergrift,Pa. U5
20.....36		Zanesville,O. A10
20.....38		Mansfield,O. E6
20.....42		Newport,Ky. N9
20.....48		Brackenridge,Pa. A4
20.....48		Vandergrift,Pa. U5
21.....36		Zanesville,O. A10
21.....38		Mansfield,O. E6
21.....42		Newport,Ky. N9
21.....48		Brackenridge,Pa. A4
21.....48		Vandergrift,Pa. U5
22.....36		Zanesville,O. A10
22.....38		Mansfield,O. E6
22.....42		Newport,Ky. N9
22.....48		Brackenridge,Pa. A4
22.....48		Vandergrift,Pa. U5
23.....36		Zanesville,O. A10
23.....38		Mansfield,O. E6
23.....42		Newport,Ky. N9
23.....48		Brackenridge,Pa. A4
23.....48		Vandergrift,Pa. U5
24.....35		BeechBottom,W.Va. W10
24.....36		Zanesville,O. A10
24.....38		Mansfield,O. E6
24.....42		Newport,Ky. N9
24.....48		Brackenridge,Pa. A4
24.....48		Vandergrift,Pa. U5
25.....35		BeechBottom,W.Va. W10
25.....36		Zanesville,O. A10
25.....38		Mansfield,O. E6
25.....42		Newport,Ky. N9
25.....48		Brackenridge,Pa. A4
25.....48		Vandergrift,Pa. U5
26.....35		BeechBottom,W.Va. W10
26.....36		Zanesville,O. A10
26.....38		Mansfield,O. E6
26.....42		Newport,Ky. N9
26.....48		Brackenridge,Pa. A4
26.....48		Vandergrift,Pa. U5
27.....35		BeechBottom,W.Va. W10
27.....36		Zanesville,O. A10
27.....38		Mansfield,O. E6
27.....42		Newport,Ky. N9
27.....44		Brackenridge,Pa. A4
27.....44		Vandergrift,Pa. U5
28.....34		BeechBottom,W.Va. W10
28.....36		Newport,Ky. N9
28.....36		Zanesville,O. A10
28.....38		Mansfield,O. E6
28.....44		Brackenridge,Pa. A4
28.....44		Vandergrift,Pa. U5
29.....34		BeechBottom,W.Va. W10
29.....36		Newport,Ky. N9
29.....36		Zanesville,O. A10
29.....36		Mansfield,O. E6
29.....44		Vandergrift,Pa. U5
30.....36		Zanesville,O. A10
30.....40		Vandergrift,Pa. U5

Dynamo Grade, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
18.....48		Brackenridge,Pa. A4
19.....48		Brackenridge,Pa. A4
20.....48		Brackenridge,Pa. A4
21.....48		Brackenridge,Pa. A4
22.....10		Warren,O. R2
22.....36		Vandergrift,Pa. U5
22.....48		Brackenridge,Pa. A4
23.....10		Warren,O. R2
23.....36		Vandergrift,Pa. U5
23.....48		Brackenridge,Pa. A4
24.....10		Warren,O. R2
24.....36		Vandergrift,Pa. U5
24.....48		Brackenridge,Pa. A4
25.....10		Warren,O. R2
25.....36		Vandergrift,Pa. U5
25.....48		Brackenridge,Pa. A4
26.....10		Warren,O. R2
26.....36		Vandergrift,Pa. U5
26.....48		Brackenridge,Pa. A4
27.....10		Warren,O. R2
27.....36		Vandergrift,Pa. U5
27.....48		Brackenridge,Pa. A4
28.....10		Warren,O. R2
28.....36		Vandergrift,Pa. U5
28.....48		Brackenridge,Pa. A4
29.....10		Warren,O. R2
29.....36		Vandergrift,Pa. U5
29.....48		Brackenridge,Pa. A4

Transformer 72, Hot-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
.0070..24		Vandergrift,Pa. U5
.0075..24		Vandergrift,Pa. U5
.0100..24		Vandergrift,Pa. U5
16.....48		Vandergrift,Pa. U5
17.....48		Vandergrift,Pa. U5
18.....36		Zanesville,O. A10
18.....48		Brackenridge,Pa. A4
18.....48		Vandergrift,Pa. U5
19.....36		Zanesville,O. A10
19.....48		Brackenridge,Pa. A4
19.....48		Vandergrift,Pa. U5
20.....36		Zanesville,O. A10
20.....48		Brackenridge,Pa. A4
20.....48		Vandergrift,Pa. U5
21.....36		Zanesville,O. A10
21.....48		Brackenridge,Pa. A4
21.....48		Vandergrift,Pa. U5
22.....36		Zanesville,O. A10
22.....48		Brackenridge,Pa. A4
22.....48		Vandergrift,Pa. U5
23.....36		Zanesville,O. A10
23.....48		Brackenridge,Pa. A4
23.....48		Vandergrift,Pa. U5
24.....35		BeechBottom,W.Va. W10
24.....36		Zanesville,O. A10
24.....48		Brackenridge,Pa. A4
24.....48		Vandergrift,Pa. U5
25.....35		BeechBottom,W.Va. W10
25.....36		Zanesville,O. A10
25.....48		Brackenridge,Pa. A4
25.....48		Vandergrift,Pa. U5
26.....35		BeechBottom,W.Va. W10
26.....36		Zanesville,O. A10
26.....48		Brackenridge,Pa. A4
26.....48		Vandergrift,Pa. U5
27.....35		BeechBottom,W.Va. W10
27.....36		Zanesville,O. A10
27.....44		Brackenridge,Pa. A4
27.....44		Vandergrift,Pa. U5
28.....32		BeechBottom,W.Va. W10
28.....36		Zanesville,O. A10
28.....44		Brackenridge,Pa. A4
28.....44		Vandergrift,Pa. U5
29.....32		BeechBottom,W.Va. W10
29.....36		Zanesville,O. A10
29.....44		Brackenridge,Pa. A4
29.....44		Vandergrift,Pa. U5
30.....36		Brackenridge,Pa. A4
30.....40		Vandergrift,Pa. U5

Transformer 72, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
18.....48		Brackenridge,Pa. A4
19.....48		Brackenridge,Pa. A4
20.....48		Brackenridge,Pa. A4
21.....48		Brackenridge,Pa. A4
22.....10		Warren,O. R2
22.....48		Brackenridge,Pa. A4
23.....10		Warren,O. R2
23.....48		Brackenridge,Pa. A4
24.....10		Warren,O. R2
24.....48		Brackenridge,Pa. A4
25.....10		Warren,O. R2
25.....48		Brackenridge,Pa. A4
26.....10		Warren,O. R2
26.....48		Brackenridge,Pa. A4
27.....10		Warren,O. R2
27.....48		Brackenridge,Pa. A4
28.....10		Warren,O. R2
28.....48		Brackenridge,Pa. A4
29.....10		Warren,O. R2
29.....48		Brackenridge,Pa. A4

Transformer 65, Hot-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
18.....36		Zanesville,O. A10
19.....36		Zanesville,O. A10
20.....36		Zanesville,O. A10
21.....36		Zanesville,O. A10
22.....36		Zanesville,O. A10
23.....36		Zanesville,O. A10
24.....36		Zanesville,O. A10
25.....36		Zanesville,O. A10
26.....32		BeechBottom,W.Va. W10
26.....36		Vandergrift,Pa. U5
26.....36		Zanesville,O. A10
27.....32		BeechBottom,W.Va. W10
27.....36		Vandergrift,Pa. U5
27.....36		Zanesville,O. A10
28.....32		BeechBottom,W.Va. W10
28.....36		Vandergrift,Pa. U5
28.....36		Zanesville,O. A10
29.....32		BeechBottom,W.Va. W10
29.....36		Vandergrift,Pa. U5
29.....36		Zanesville,O. A10
30.....36		Vandergrift,Pa. U5

ELECTRICAL STEEL

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Transformer 58, Hot-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
.0070	24	Vandergrift, Pa. U5
.0075	24	Vandergrift, Pa. U5
.0100	24	Vandergrift, Pa. U5
18	36	Zanesville, O. A10
19	36	Zanesville, O. A10
20	36	Zanesville, O. A10
21	36	Zanesville, O. A10
22	36	Zanesville, O. A10
23	36	Zanesville, O. A10
24	36	Zanesville, O. A10
25	36	Zanesville, O. A10
26	32	BeechBottom, W.Va. W10
26	36	Vandergrift, Pa. U5
26	36	Zanesville, O. A10
27	32	BeechBottom, W.Va. W10
27	36	Vandergrift, Pa. U5
27	36	Zanesville, O. A10
28	32	BeechBottom, W.Va. W10
28	36	Vandergrift, Pa. U5
28	36	Zanesville, O. A10
29	32	BeechBottom, W.Va. W10
29	36	Vandergrift, Pa. U5
29	36	Zanesville, O. A10
30	36	Vandergrift, Pa. U5

Transformer 52, Hot-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
18	36	Zanesville, O. A10
19	36	Zanesville, O. A10
20	36	Zanesville, O. A10
21	36	Zanesville, O. A10
22	36	Zanesville, O. A10
23	36	Zanesville, O. A10
24	36	Zanesville, O. A10
25	36	Zanesville, O. A10
26	36	Vandergrift, Pa. U5
26	36	Zanesville, O. A10
27	36	Vandergrift, Pa. U5
27	36	Zanesville, O. A10
28	36	Vandergrift, Pa. U5
28	36	Zanesville, O. A10
29	32	BeechBottom, W.Va. W10
29	36	Vandergrift, Pa. U5
29	36	Zanesville, O. A10
30	36	Vandergrift, Pa. U5

Transformer 100, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
29	25	WestLeechburg, Pa. A4
30	25	WestLeechburg, Pa. A4

Transformer 100, Cold-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
29	25	WestLeechburg, Pa. A4
29	36	Vandergrift, Pa. U5
30	25	WestLeechburg, Pa. A4

Transformer 90, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
29	25	WestLeechburg, Pa. A4
30	25	WestLeechburg, Pa. A4

Transformer 90, Cold-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
29	25	WestLeechburg, Pa. A4
29	36	Vandergrift, Pa. U5
30	25	WestLeechburg, Pa. A4

Transformer 80, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
29	25	WestLeechburg, Pa. A4
29	30	Butler, Pa. A10
30	25	WestLeechburg, Pa. A4

Transformer 80, Cold-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
29	25	WestLeechburg, Pa. A4
29	30	Butler, Pa. A10
29	36	Vandergrift, Pa. U5
30	25	WestLeechburg, Pa. A4

Transformer 73, Cold-Rolled, Coils

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
29	25	WestLeechburg, Pa. A4
29	30	Butler, Pa. A10
30	25	WestLeechburg, Pa. A4

Transformer 73, Cold-Rolled, Cut Lengths

Elec. Sht. Ga.	Max. Width (in.)	Mill Point, Producer
29	25	WestLeechburg, Pa. A4
29	30	Butler, Pa. A10
29	36	Vandergrift, Pa. U5
30	25	WestLeechburg, Pa. A4

TIN MILL PRODUCTS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Black Plate

Aliquippa, Pa. J5
Dravosburg, Pa. U5
Fairfield, Ala. T2
Fairless, Pa. U5
Fontana, Calif. K1
Gary, Ind. U5
GraniteCity, Ill. G4
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Niles, O. R2
Pittsburg, Calif. C11
SparrowsPoint, Md. B2
Steubenville, O. W6
Weirton, W.Va. W6
Yorkville, O. W10

Coke Tin Plate

Aliquippa, Pa. J5
Dravosburg, Pa. U5
Fairfield, Ala. T2
Fairless, Pa. U5
Fontana, Calif. K1
Gary, Ind. U5
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Niles, O. R2
Pittsburg, Calif. C11
SparrowsPoint, Md. B2
Steubenville, O. W6
Weirton, W.Va. W6
Yorkville, O. W10

Differentially Coated Tin Plate

Weirton, W.Va. W6
Yorkville, O. W10

Electrolytic Tin Plate

Aliquippa, Pa. J5
Dravosburg, Pa. U5
Fairfield, Ala. T2
Fairless, Pa. U5
Fontana, Calif. K1
Gary, Ind. U5
GraniteCity, Ill. G4
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Niles, O. R2
Pittsburg, Calif. C11
SparrowsPoint, Md. B2
Weirton, W.Va. W6
Yorkville, O. W10

Hollowware Enameling Black Plate

Dravosburg, Pa. U5
Follansbee, W.Va. F4
Gary, Ind. U5
IndianaHarbor, Ind. Y1
Yorkville, O. W10

Manufacturing Ternes

Dravosburg, Pa. U5
Gary, Ind. U5
Yorkville, O. W10

Roofing Short Ternes

Follansbee, W.Va. F4
Gary, Ind. U5
Yorkville, O. W10

PLATES

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Sheared or Flame Cut (carbon)

Thickness (inches)	Max. Widths Max. Lengths or Size Range (inches)	Mill Point, Producer
.180	48 1/16x480 to 96x300	SparrowsPt,Md. B2
.180	48 1/16x600 to 90x360	Munhall,Pa. U5
3/16	24x360 to 96x180	Harrisburg,Pa. C5
3/16	48x480 to 96x384	Geneva,Utah C11
3/16	48x720 to 84x300	Ind.Harbor,Ind. I-2
3/16	over 48x600 to 120x320	Fairfld,Ala. T2
3/16	48 1/16x480 to 96x300	SparrowsPt,Md. B2
3/16	48 1/16x720 to 88 1/4x720	S.Chicago,Ill. U5
3/16	48 1/16x900 to 138x300	Munhall,Pa. U5
3/16	49x480 to 102x300	Johnstown,Pa. B2
3/16	54x480 to 84x480	Fontana,Calif. K1
3/16	54x650 to 108x500	Coatesville,Pa. L7
3/16	60x480 to 84x480	Houston S5
3/16-3/4	24-72x up to 360	Conshohocken,Pa. A3
.230	over 6-10 x up to 504	Gary,Ind. U5
.230	over 10-32 x up to 624	Gary,Ind. U5
.230	16x132 to 120x300	Johnstown,Pa. B2
.230	24x480 to 132x360	SparrowsPt,Md. B2
.230	24x720 to 88 1/4 x720	S.Chicago,Ill. U5
.230	24x720 to 138x300	Munhall,Pa. U5
.230-1/2	12-36x60-240	Fairfield,Ala. T2
1/4	16x132 to 120x300	Johnstown,Pa. B2
1/4	24x360 to 108x240	Harrisburg,Pa. C5
1/4	24x360 to 126x350	Coatesville,Pa. L7
1/4	24x480 to 78x480	Claymont,Del. C22
1/4	24x480 to 132x360	SparrowsPt.,Md. B2
1/4	24x720 to 88 1/4 x720	So.Chicago,Ill. U5
1/4	24x720 to 150x450	Munhall,Pa. U5
1/4	30x720 to 96x300	Ind.Harbor,Ind. I-2
1/4	over 32x300 to 60x300	Economy,Pa. B14
1/4	36x600 to 120x384	Geneva,Utah C11
1/4	over 36x600 to 124x400	Fairfield,Ala. T2
1/4	48x480 to 90x480	Fontana,Calif. K1
1/4	48x480 to 96x480	Houston S5
1/4-5/16	over 6-10 x up to 504	Gary,Ind. U5
1/4-5/16	over 30-32 x up to 624	Gary,Ind. U5
1/4-3/4	over 10-30 x up to 624	Gary,Ind. U5
5/16	16x132 to 120x350	Johnstown,Pa. B2
5/16	24x360 to 150x310	Coatesville,Pa. L7
5/16	24x432 to 115x240	Harrisburg,Pa. C5
5/16	24x480 to 150x360	SparrowsPt.,Md. B2
5/16	24x600 to 144x320	Claymont,Del. C22
5/16	24x720 to 88x720	SouthChicago,Ill. U5
5/16	24x900 to 150x450	Munhall,Pa. U5
5/16	30x720 to 96x360	Ind.Harbor,Ind. I-2
5/16	over 32x300 to 60x300	Economy,Pa. B14
5/16	36x600 to 121x384	Geneva,Utah C11
5/16	over 36x480 to 96x420	Fontana,Calif. K1
5/16	over 36x600 to 128x360	Fairfield,Ala. T2
5/16	48x480 to 108x480	Houston S5
3/8	16x132 to 120x420	Johnstown,Pa. B2
3/8	24x360 to 195x250	Coatesville,Pa. L7
3/8	24x432 to 115x300	Harrisburg,Pa. C5
3/8	24x480 to 150x360	SparrowsPt.,Md. B2
3/8	24x600 to 144x300	Claymont,Del. C22
3/8	24x720 to 88x720	SouthChicago,Ill. U5
3/8	24x900 to 150x480	Munhall,Pa. U5
3/8	30x720 to 96x360	Ind.Harbor,Ind. I-2
3/8	over 32x300 to 72x300	Economy,Pa. B14
3/8	36x600 to 121x384	Geneva,Utah C11
3/8	over 36x480 to 96x480	Fontana,Calif. K1
3/8	over 36x720 to 128x400	Fairfield,Ala. T2
3/8	48x480 to 108x480	Houston S5
7/16	16x132 to 120x420	Johnstown,Pa. B2
7/16	24x360 to 195x250	Coatesville,Pa. L7
7/16	24x432 to 115x360	Harrisburg,Pa. C5
7/16	24x480 to 150x360	SparrowsPt.,Md. B2
7/16	24x600 to 144x380	Claymont,Del. C22
7/16	24x720 to 88x660	SouthChicago,Ill. U5
7/16	24x900 to 150x480	Munhall,Pa. U5
7/16	30x720 to 96x360	Ind.Harbor,Ind. I-2
7/16	over 32x300 to 72x300	Economy,Pa. B14
7/16	36x600 to 121x384	Geneva,Utah C11
7/16	over 36x480 to 96x480	Fontana,Calif. K1
7/16	over 36x720 to 128x400	Fairfield,Ala. T2
7/16	48x480 to 108x480	Houston S5
1/2	16x132 to 120x430	Johnstown,Pa. B2
1/2	24x360 to 195x250	Coatesville,Pa. L7
1/2	24x432 to 115x360	Harrisburg,Pa. C5
1/2	24x480 to 150x360	SparrowsPt.,Md. B2
1/2	24x600 to 144x380	Claymont,Del. C22
1/2	24x720 to 88x630	SouthChicago,Ill. U5
1/2	24x900 to 150x480	Munhall,Pa. U5
1/2	30x720 to 96x360	Ind.Harbor,Ind. I-2
1/2	over 32x300 to 72x300	Economy,Pa. B14
1/2	36x600 to 121x384	Geneva,Utah C11
1/2	over 36x480 to 96x480	Fontana,Calif. K1
1/2	over 36x720 to 128x400	Fairfield,Ala. T2
1/2	48x480 to 108x480	Houston S5
9/16	16x132 to 120x420	Johnstown,Pa. B2
9/16	24x360 to 195x250	Coatesville,Pa. L7
9/16	24x480 to 150x360	SparrowsPt.,Md. B2
9/16	24x600 to 144x380	Claymont,Del. C22
9/16	24x720 to 84x576	SouthChicago,Ill. U5
9/16	24x900 to 150x480	Munhall,Pa. U5
9/16	30x720 to 96x360	Ind.Harbor,Ind. I-2
9/16	36x600 to 121x384	Geneva,Utah C11
9/16	over 36x480 to 96x480	Fontana,Calif. K1
9/16	over 36x720 to 128x400	Fairfield,Ala. T2
9/16-1 1/8	24-36x60-240	Fairfield,Ala. T2
5/8	16x132 to 120x420	Johnstown,Pa. B2
5/8	24x360 to 195x250	Coatesville,Pa. L7
5/8	24x432 to 115x360	Harrisburg,Pa. C5
5/8	24x480 to 150x360	SparrowsPt.,Md. B2
5/8	24x600 to 144x380	Claymont,Del. C22
5/8	24x720 to 84x515	SouthChicago,Ill. U5
5/8	24x900 to 150x500	Munhall,Pa. U5
5/8	30x684 to 96x360	Ind.Harbor,Ind. I-2
5/8	over 32x300 to 72x300	Economy,Pa. B14
5/8	36x600 to 121x360	Geneva,Utah C11
5/8	over 36x480 to 96x480	Fontana,Calif. K1
5/8	over 36x720 to 128x400	Fairfield,Ala. T2
5/8	48x480 to 108x480	Houston S5
over 5/8-3/4	over 6-10 x up to 384	Gary,Ind. U5
11/16	16x132 to 120x400	Johnstown,Pa. B2
11/16	24x360 to 195x250	Coatesville,Pa. L7
11/16	24x480 to 150x360	SparrowsPt.,Md. B2
11/16	24x600 to 144x396	Claymont,Del. C22
11/16	24x720 to 84x458	SouthChicago,Ill. U5
11/16	24x900 to 150x540	Munhall,Pa. U5
11/16	36x600 to 121x360	Geneva,Utah C11
11/16	over 36x480 to 96x458	Fontana,Calif. K1
11/16	over 36x720 to 128x400	Fairfield,Ala. T2
3/4	16x132 to 120x380	Johnstown,Pa. B2
3/4	24x360 to 195x250	Coatesville,Pa. L7
3/4	24x432 to 115x336	Harrisburg,Pa. C5
3/4	24x480 to 150x360	SparrowsPt.,Md. B2
3/4	24x600 to 144x380	Claymont,Del. C22
3/4	24x720 to 84x420	SouthChicago,Ill. U5
3/4	24x900 to 150x540	Munhall,Pa. U5
3/4	30x564 to 96x300	Ind.Harbor,Ind. I-2
3/4	over 32x300 to 72x300	Economy,Pa. B14
3/4	36x600 to 121x340	Geneva,Utah C11
3/4	over 36x480 to 96x420	Fontana,Calif. K1
3/4	over 36x720 to 128x400	Fairfield,Ala. T2
3/4	48x480 to 108x432	Houston S5
13/16	16x132 to 120x300	Johnstown,Pa. B2
13/16	24x480 to 150x360	SparrowsPt.,Md. B2
13/16	24x495 to 150x540	Munhall,Pa. U5
13/16	36x480 to 120x330	Geneva,Utah C11
13/16	over 36x720 to 128x400	Fairfield,Ala. T2
7/8	16x132 to 120x290	Johnstown,Pa. B2
7/8	24x360 to 195x250	Coatesville,Pa. L7
7/8	24x432 to 115x294	Harrisburg,Pa. C5
7/8	24x480 to 150x360	SparrowsPt.,Md. B2
7/8	24x495 to 150x540	Munhall,Pa. U5
7/8	24x600 to 144x380	Claymont,Del. C22
7/8	30x540 to 96x240	Ind.Harbor,Ind. I-2
7/8	over 32x300 to 72x276	Economy,Pa. B14
7/8	36x480 to 120x280	Geneva,Utah C11
7/8	over 36x480 to 96x360	Fontana,Calif. K1
7/8	over 36x720 to 128x400	Fairfield,Ala. T2
7/8	48x480 to 108x372	Houston S5
15/16	16x132 to 120x290	Johnstown,Pa. B2
1	16x132 to 120x280	Johnstown,Pa. B2
1	24x360 to 195x250	Coatesville,Pa. L7
1	24x432 to 115x256	Harrisburg,Pa. C5
1	24x450 to 150x540	Munhall,Pa. U5
1	24x480 to 150x360	SparrowsPt.,Md. B2
1	24x600 to 144x380	Claymont,Del. C22
1	30x540 to 96x240	Ind.Harbor,Ind. I-2
1	over 32x300 to 72x240	Economy,Pa. B14
1	36x480 to 120x260	Geneva,Utah C11
1	over 36x480 to 96x315	Fontana,Calif. K1
1	over 36x720 to 128x380	Fairfield,Ala. T2
1	48x480 to 108x324	Houston S5
1 1/16	24x360 to 195x250	Coatesville,Pa. L7
1 1/16	24x450 to 150x540	Munhall,Pa. U5
1 1/16	24x480 to 150x360	SparrowsPt.,Md. B2
1 1/16	24x600 to 144x348	Claymont,Del. C22
1 1/16	30x540 to 96x240	Ind.Harbor,Ind. I-2
1 1/16	31x475 to 120x250	Johnstown,Pa. B2
1 1/16	36x480 to 108x270	Geneva,Utah C11
1 1/16	over 36x480 to 96x273	Fontana,Calif. K1
1 1/16	over 36x720 to 128x360	Fairfield,Ala. T2
1 1/16	48x480 to 108x288	Houston S5
1 1/8	24x360 to 108x264	Harrisburg,Pa. C5
1 1/8	24x360 to 195x250	Coatesville,Pa. L7
1 1/8	24x400 to 150x540	Munhall,Pa. U5
1 1/8	24x480 to 150x360	SparrowsPt.,Md. B2
1 1/8	24x600 to 144x348	Claymont,Del. C22
1 1/8	27x270 to 128x327	Fairfield,Ala. T2
1 1/8	31x450 to 120x260	Johnstown,Pa. B2
1 1/8	32x480 to 94x220	Ind.Harbor,Ind. I-2
1 1/8	over 32x288 to 72x192	Economy,Pa. B14
1 1/8	36x480 to 108x240	Geneva,Utah C11
1 1/8	over 36x480 to 90x263	Fontana,Calif. K1
1 1/8	48x480 to 108x264	Houston S5
1 1/8-1 5/8	10-15 x 48-120	Fairfield,Ala. T2
1 1/8-1 5/8	15-27 x 48-240	Fairfield,Ala. T2
1 3/16	24x360 to 195x250	Coatesville,Pa. L7
1 3/16	24x600 to 144x320	Claymont,Del. C22
1 3/16	27x270 to 128x294	Fairfield,Ala. T2
1 3/16	over 36x480 to 90x244	Fontana,Calif. K1
1 1/4	24x360 to 195x250	Coatesville,Pa. L7
1 1/4	24x400 to 150x540	Munhall,Pa. U5
1 1/4	24x480 to 150x360	SparrowsPt.,Md. B2
1 1/4	24x600 to 144x340	Claymont,Del. C22
1 1/4	27x270 to 128x266	Fairfield,Ala. T2
1 1/4	31x400 to 120x220	Johnstown,Pa. B2
1 1/4	32x480 to 94x192	Ind.Harbor,Ind. I-2
1 1/4	over 32x240 to 72x156	Economy,Pa. B14
1 1/4	36x360 to 108x256	Harrisburg,Pa. C5
1 1/4	36x480 to 108x200	Geneva,Utah C11
1 1/4	over 36x480 to 90x224	Fontana,Calif. K1
1 5/16	27x270 to 128x247	Fairfield,Ala. T2
1 5/16	49x370 to 96x200	Geneva,Utah C11
1 3/8	24x360 to 195x250	Coatesville,Pa. L7
1 3/8	24x480 to 150x360	SparrowsPt.,Md. B2
1 3/8	24x544 to 144x300	Claymont,Del. C22
1 3/8	27x270 to 128x226	Fairfield,Ala. T2
1 3/8	31x360 to 120x170	Johnstown,Pa. B2
1 3/8	32x480 to 94x164	Ind.Harbor,Ind. I-2
1 3/8	over 32x216 to 72x138	Economy,Pa. B14
1 3/8	36x300 to 108x224	Harrisburg,Pa. C5
1 3/8	over 36x411 to 84x205	Fontana,Calif. K1
1 3/8	42x500 to 150x540	Munhall,Pa. U5
1 3/8	49x345 to 90x200	Geneva,Utah C11
1 7/8	27x270 to 128x209	Fairfield,Ala. T2
1 7/8	49x320 to 84x200	Geneva,Utah C11
2	24x360 to 195x250	Coatesville,Pa. L7
2	24x420 to 150x330	SparrowsPt.,Md. B2
2	24x544 to 144x300	Claymont,Del. C22
2	27x270 to 128x194	Fairfield,Ala. T2
2	32x420 to 94x144	Ind.Harbor,Ind. I-2
2	over 32x180 to 72x120	Economy,Pa. B14
2	36x240 to 108x196	Harrisburg,Pa. C5
2	over 36x360 to 84x180	Fontana,Calif. K1
2	42x500 to 150x480	Munhall,Pa. U5
2	43x375 to 120x150	Johnstown,Pa. B2
2	49x300 to 78x270	Geneva,Utah C11
2 1/16	49x285 to 78x255	Geneva,Utah C11
2 1/16	16x266 to 120x155	Johnstown,Pa. B2
2 1/16	24x544 to 138x283	Claymont,Del. C22
2 1/16	24x600 to 195x225	Coatesville,Pa. L7
2 1/16	27x270 to 128x168	Fairfield,Ala. T2
2 1/16	32x372 to 94x128	Ind.Harbor,Ind. I-2
2 1/16	over 36x320 to 84x160	Fontana,Calif. K1
2 1/16	37x348 to 146x300	SparrowsPt.,Md. B2
2 1/16	42x500 to 150x382	Munhall,Pa. U5
2 1/16	49x270 to 78x240	Geneva,Utah C11
2 1/8	16x252 to 120x148	Johnstown,Pa. B2
2 1/8	49x255 to 78x225	Geneva,Utah C11
2 1/16	16x240 to 120x140	Johnstown,Pa. B2
2 1/16	24x491 to 138x256	Claymont,Del. C22
2 1/16	24x600 to 195x225	Coatesville,Pa. L7
2 1/16	27x265 to 128x148	Fairfield,Ala. T2
2 1/16	32x336 to 94x108	Ind.Harbor,Ind. I-2
2 1/16	over 32x144 to 72x96	Economy,Pa. B14
2 1/16	over 36x288 to 84x144	Fontana,Calif. K1
2 1/16	37x313 to 146x270	SparrowsPt.,Md. B2
2 1/16	42x500 to 150x343	Munhall,Pa. U5
2 1/16	49x240 to 78x215	Geneva,Utah C11
2 1/8	49x230 to 78x205	Geneva,Utah C11
2 3/16	16x218 to 120x128	Johnstown,Pa. B2
2 3/16	24x442 to 138x230	Claymont,Del. C22
2 3/16	24x600 to 195x225	Coatesville,Pa. L7
2 3/16	27x240 to 128x131	Fairfield,Ala. T2
2 3/16	32x306 to 94x104	Ind.Harbor,Ind. I-2
2 3/16	over 36x262 to 78x141	Fontana,Calif. K1
2 3/16	37x285 to 146x245	SparrowsPt.,Md. B2
2 3/16	49x220 to 72x210	Geneva,Utah C11
2 1/4	49x210 to 72x200	Geneva,Utah C11
3	16x198 to 120x120	Johnstown,Pa. B2
3	24x408 to 138x212	Claymont,Del. C22
3	24x560 to 195x225	Coatesville,Pa. L7
3	27x215 to 124x128	Fairfield,Ala. T2
3	32x276 to 94x94	IndianaHarbor,Ind. I-2
3	over 32x120 to 72x81	Economy,Pa. B14
3	over 36x240 to 72x140	Fontana,Calif. K1
3	37x261 to 146x225	SparrowsPt.,Md. B2
3	42x500 to 150x284	Munhall,Pa. U5
3	49x200 to 66x210	Geneva,Utah C11
3 1/16	16x185 to 113x115	Johnstown,Pa. B2
3 1/16	24x376 to 132x205	Claymont,Del. C22
3 1/16	24x520 to 195x195	Coatesville,Pa. L7
3 1/16	over 36x221 to 66x141	Fontana,Calif. K1
3 1/8	16x177 to 108x118	Johnstown,Pa. B2
3 1/16	16x170 to 108x112	Johnstown,Pa. B2
3 1/16	24x350 to 132x190	Claymont,Del. C22
3 1/16	24x480 to 195x195	Coatesville,Pa. L7
3 1/16	27x185 to 120x120	Fairfield,Ala. T2
3 1/16	over 36x205 to 66x130	Fontana,Calif. K1
3 1/16	37x223 to 146x190	SparrowsPt.,Md. B2
3 1/16	over 46x500 to 150x243	Munhall,Pa. U5
3 3/16	16x161 to 108x107	Johnstown,Pa. B2
3 3/16	24x328 to 132x178	Claymont,Del. C22
3 3/16	34x450 to 195x195	Coatesville,Pa. L7
3 3/16	over 36x192 to 60x134	Fontana,Calif. K1
4	16x150 to 102x105	Johnstown,Pa. B2
4	24x306 to 132x166	Claymont,Del. C22
4	24x420 to 195x195	Coatesville,Pa. L7
4	27x156 to 108x115	Fairfield,Ala. T2

PLATES

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Sheared or Flame Cut (carbon)

Thickness (inches)	Max. Widths Max. Lengths or Size Range (inches)	Mill Point, Producer
4	over 36x180 to 60x126	Fontana, Calif. K1
4	37x196 to 146x170	SparrowsPt., Md. B2
4	over 46x500 to 150x212	Munhall, Pa. U5
4¼	16x140 to 102x101	Johnstown, Pa. B2
4¼	24x288 to 132x157	Claymont, Del. C22
4⅜	16x138 to 102x97	Johnstown, Pa. B2
4½	16x132 to 96x101	Johnstown, Pa. B2
4½	24x262 to 132x142	Claymont, Del. C22
4½	24x375 to 195x195	Coatesville, Pa. L7
4½	37x174 to 146x150	SparrowsPt., Md. B2
4½	38x240 to 104x106	Fairfield, Ala. T2
4½	over 46x494 to 150x185	Munhall, Pa. U5
4⅝	16x126 to 96x97	Johnstown, Pa. B2
4¾	24x258 to 132x140	Claymont, Del. C22
4⅞	16x123 to 96x95	Johnstown, Pa. B2
5	24x246 to 132x134	Claymont, Del. C22
5	24x335 to 196x195	Coatesville, Pa. L7
5	37x156 to 138x145	SparrowsPt., Md. B2
5	38x240 to 100x101	Fairfield, Ala. T2
5	over 46x440 to 150x165	Munhall, Pa. U5
5¼	24x232 to 126x132	Claymont, Del. C22
5¼	24x224 to 126x128	Claymont, Del. C22
5¼	24x305 to 195x195	Coatesville, Pa. L7
5¼	37x142 to 132x135	SparrowsPt., Md. B2
5¼	38x235 to 92x100	Fairfield, Ala. T2
5¼	over 46x398 to 144x158	Munhall, Pa. U5
5⅝	24x212 to 126x121	Claymont, Del. C22
6	24x206 to 126x117	Claymont, Del. C22
6	24x280 to 195x195	Coatesville, Pa. L7
6	37x130 to 126x130	SparrowsPt., Md. B2
6	38x214 to 88x92	Fairfield, Ala. T2
6	over 46x364 to 138x150	Munhall, Pa. U5
6 and over	Check with mill	Claymont, Del. C22
6½	24x260 to 195x195	Coatesville, Pa. L7
6½	37x120 to 120x125	SparrowsPt., Md. B2
6½	38x197 to 84x89	Fairfield, Ala. T2
6½	over 46x337 to 138x138	Munhall, Pa. U5
7	24x240 to 195x195	Coatesville, Pa. L7
7	37x111 to 114x125	SparrowsPt., Md. B2
7	38x182 to 78x88	Fairfield, Ala. T2
7	over 46x311 to 132x133	Munhall, Pa. U5
7½	24x225 to 186x185	Coatesville, Pa. L7
7½	37x103 to 114x115	SparrowsPt., Md. B2
7½	38x169 to 78x81	Fairfield, Ala. T2
7½	over 46x292 to 126x130	Munhall, Pa. U5
8	24x210 to 180x180	Coatesville, Pa. L7
8	37x97 to 108x115	SparrowsPt., Md. B2
8	38x157 to 72x82	Fairfield, Ala. T2
8	over 46x279 to 120x128	Munhall, Pa. U5
8½	24x198 to 174x220	Coatesville, Pa. L7
8½	37x92 to 102x115	SparrowsPt., Md. B2
8½	over 46x257 to 114x129	Munhall, Pa. U5
9	24x187 to 174x205	Coatesville, Pa. L7
9	37x87 to 102x110	SparrowsPt., Md. B2
9	over 46x244 to 108x127	Munhall, Pa. U5
9½	37x81 to 96x108	SparrowsPoint, Md. B2
9½	over 46x229 to 102x128	Munhall, Pa. U5
10	24x168 to 174x185	Coatesville, Pa. L7
10	37x77 to 96x100	SparrowsPoint, Md. B2
10	over 46x218 to 96x128	Munhall, Pa. U5
10½	37x74 to 96x98	SparrowsPoint, Md. B2
10½	over 46x205 to 90x130	Munhall, Pa. U5
11	24x153 to 174x170	Coatesville, Pa. L7
11	37x71 to 90x100	SparrowsPoint, Md. B2
11	over 46x198 to 84x137	Munhall, Pa. U5
11½	37x68 to 90x95	SparrowsPoint, Md. B2
11½	over 46x190 to 84x132	Munhall, Pa. U5
12	24x140 to 162x165	Coatesville, Pa. L7
12	37x65 to 90x93	SparrowsPoint, Md. B2
12	over 46x181 to 84x128	Munhall, Pa. U5
12½	37x62 to 84x94	SparrowsPoint, Md. B2
12½	over 46x177 to 78x128	Munhall, Pa. U5
13	24x129 to 156x160	Coatesville, Pa. L7
13	37x59 to 84x90	SparrowsPoint, Md. B2
13	over 46x168 to 72x134	Munhall, Pa. U5
13½	37x57 to 84x87	SparrowsPoint, Md. B2
13½	over 46x161 to 72x127	Munhall, Pa. U5
14	24x120 to 150x155	Coatesville, Pa. L7
14	37x55 to 84x84	SparrowsPoint, Md. B2
14	over 46x156 to 66x133	Munhall, Pa. U5
14½	over 46x150 to 66x128	Munhall, Pa. U5
15	24x112 to 144x150	Coatesville, Pa. L7
15	over 46x145 to 60x137	Munhall, Pa. U5
16	36x139 to 138x140	Coatesville, Pa. L7
17	36x131 to 132x135	Coatesville, Pa. L7
18	36x123 to 126x135	Coatesville, Pa. L7
19	36x117 to 126x130	Coatesville, Pa. L7
20	36x111 to 120x130	Coatesville, Pa. L7
21	54x99 to 120x120	Coatesville, Pa. L7
22	54x94 to 114x120	Coatesville, Pa. L7
23	54x90 to 114x115	Coatesville, Pa. L7
24	54x86 to 108x115	Coatesville, Pa. L7
25	54x83 to 108x110	Coatesville, Pa. L7

Sheared or Flame Cut (high-strength)

.180	over 48-66x360	Fairfield, Ala. T2
.180	48 1/16 x360 to 84x300	Sprrws.Pt., Md. B2
.180	48 1/16 x600 to 90x360	Munhall, Pa. U5
.180*	49x480 to 72x480	Lackawanna, N.Y. B2
.180–.203*	48 1/16 x480 to 60x480	Ind.Har., Ind. I-2
.180–.2299*	48 1/16 -72x432	Cleveland J5
.180–.2299*	48 1/16 -84x480	Pittsburgh J5
.180–⅝*	Check with mill	Ecorse, Mich. G5
3/16	48x480 to 78x480	Geneva, Utah C11
3/16	over 48x360 to 90x360	Fairfield, Ala. T2
3/16*	48 1/16 x324	IndianaHarbor, Ind. Y1
3/16	48 1/16 x360 to 84x300	Sprrws.Pt., Md. B2
3/16	48 1/16 x600 to 114x288	Munhall, Pa. U5
3/16	48 1/16 x720 to 88¼ x720	S.Chicago, Ill. U5
3/16*	49x480 to 72x480	Lackawanna, N.Y. B2
3/16	49x480 to 102x300	Johnstown, Pa. B2
3/16	60x360 to 84x288	Ind.Harbor, Ind. I-2
3/16	60x480 to 84x480	Houston S5
3/16*	64x264 to 72x228	Youngstown Y1
3/16–⅜*	24-66 x up to 240	Conshohocken, Pa. A3
3/16–4	36x96 to 96x480	Fontana, Calif. K1
3/16–.2299*	48 1/16 x480 to 60x480	Ind.Harb., Ind. I-2
.2299–⅜*	7 1/16 x192 to 60x480	Ind.Harb., Ind. I-2
.230*	over 6-8 x up to 504	Gary, Ind. U5
.230	16x132 to 120x300	Johnstown, Pa. B2
.230	24x480 to 96x360	SparrowsPt., Md. B2
.230	24x660 to 114x320	Munhall, Pa. U5
.230	24x720 to 88¼ x720	S.Chicago, Ill. U5
.230*	36x480 to 72x480	Lackawanna, N.Y. B2
.230–¼*	6x24 to 21½ x300	Weirton, W.Va. W6
.230–⅜*	6-22x43-370	Riverdale, Ill. A1
.230–⅝*	7-25½ x up to 477	Conshohockn, Pa. A3
.230–½	12-36x60-240	Fairfield, Ala. T2
.230–⅝*	22-84x480	Pittsburgh J5
.230–¾*	22-72x432	Cleveland J5
¼*	over 6x150 to 48x324	Ind.Harb., Ind. Y1
¼	16x132 to 120x300	Johnstown, Pa. B2
¼	24x480 to 96x360	SparrowsPoint, Md. B2
¼	24x720 to 88¼ x720	S.Chicago, Ill. U5
¼	24x720 to 126x288	Munhall, Pa. U5
¼	30x480 to 92x240	Ind.Harbor, Ind. I-2
¼*	36x480 to 72x480	Lackawanna, N.Y. B2
¼	over 36 x 480 to 96x360	Fairfld., Ala. T2
¼	48x480 to 84x480	Geneva, Utah C11
¼	48x480 to 96x480	Houston S5
¼*	68x480 to 72x480	Youngstown Y1
¼–⅝*	over 6-8 x up to 504	Gary, Ind. U5
.251–⅜*	6x24 to 19½ x300	Weirton, W.Va. W6
5/16*	over 6x150 to 40x324	Ind.Harb., Ind. Y1
5/16	16x132 to 120x350	Johnstown, Pa. B2
5/16	24x480 to 96x360	SparrowsPt., Md. B2
5/16	24x720 to 88x720	S.Chicago, Ill. U5
5/16	24x720 to 138x240	Munhall, Pa. U5
5/16*	30x480 to 72x408	Youngstown Y1
5/16	30x480 to 92x288	Ind.Harbor, Ind. I-2
5/16*	36x480 to 72x480	Lackawanna, N.Y. B2
5/16	over 36x480 to 96x360	Fairfield, Ala. T2
5/16	48x480 to 90x480	Geneva, Utah C11
5/16	48x480 to 108x480	Houston S5
5/16	90x410 to 132x220	Gary, Ind. U5
3/8*	over 6x150 to 40x324	Ind.Harb., Ind. Y1
3/8	16x132 to 120x420	Johnstown, Pa. B2
3/8	24x480 to 108x360	SparrowsPt., Md. B2
3/8	24x720 to 88x720	S.Chicago, Ill. U5
3/8	24x840 to 138x264	Munhall, Pa. U5
3/8	30x480 to 92x300	Ind.Harbor, Ind. I-2
3/8*	36x480 to 72x480	Lackawanna, N.Y. B2
3/8	over 36x480 to 96x360	Fairfield, Ala. T2
3/8*	42x480 to 72x480	Youngstown Y1
3/8	48x480 to 96x480	Geneva, Utah C11
3/8	48x480 to 108x480	Houston S5
3/8	90x480 to 138x225	Gary, Ind. U5
.376–.437*	6x24 to 17x300	Weirton, W.Va. W6
7/16	16x132 to 120x420	Johnstown, Pa. B2
7/16	24x480 to 150x360	SparrowsPt., Md. B2
7/16	24x720 to 88x660	S.Chicago, Ill. U5
7/16	24x900 to 138x304	Munhall, Pa. U5
7/16	30x480 to 92x300	Ind.Harbor, Ind. I-2
7/16*	36x480 to 72x480	Lackawanna, N.Y. B2
7/16	over 36x480 to 96x400	Fairfield, Ala. T2
7/16	48x480 to 96x480	Geneva, Utah C11
7/16	90x480 to 138x235	Gary, Ind. U5
.438–½*	6x24 to 13½ x300	Weirton, W.Va. W6
½	16x132 to 120x430	Johnstown, Pa. B2
½	24x480 to 150x360	SparrowsPt., Md. B2
½	24x720 to 88x630	S.Chicago, Ill. U5
½	24x900 to 138x336	Munhall, Pa. U5
½	30x480 to 92x288	Ind.Harbor, Ind. I-2
½*	32x408 to 72x480	Youngstown Y1
½*	36x480 to 72x480	Lackawanna, N.Y. B2
½	over 36x480 to 96x400	Fairfield, Ala. T2
½	48x480 to 96x440	Geneva, Utah C11
½	48x480 to 108x480	Houston S5
½	90x480 to 138x250	Gary, Ind. U5
9/16	16x132 to 120x420	Johnstown, Pa. B2
9/16	24x480 to 150x360	SparrowsPt., Md. B2
9/16	24x720 to 84x576	S.Chicago, Ill. U5
9/16	24x900 to 138x360	Munhall, Pa. U5
9/16	30x480 to 92x288	Ind.Harbor, Ind. I-2
9/16*	36x480 to 72x480	Lackawanna, N.Y. B2
9/16	over 36x540 to 96x400	Fairfield, Ala. T2
9/16	48x480 to 96x390	Geneva, Utah C11
9/16	88x515 to 138x275	Gary, Ind. U5
9/16–1⅛	24-36x60-240	Fairfield, Ala. T2
⅝	16x132 to 120x420	Johnstown, Pa. B2
⅝	24x480 to 150x360	SparrowsPt., Md. B2
⅝	24x520 to 138x384	Munhall, Pa. U5
⅝	24x720 to 84x515	S.Chicago, Ill. U5
⅝	30x480 to 92x240	Ind.Harbor, Ind. I-2
⅝*	36x480 to 72x480	Lackawanna, N.Y. B2
⅝	over 36x540 to 96x400	Fairfield, Ala. T2
⅝*	38x336 to 72x408	Youngstown Y1
⅝	48x480 to 96x350	Geneva, Utah C11
⅝	48x480 to 108x480	Houston S5
⅝	88x560 to 138x300	Gary, Ind. U5
over ⅝–¾*	over 6-8 x up to 384	Gary, Ind. U5
over ⅝–¾*	22-84x360	Pittsburgh J5
11/16	16x132 to 120x400	Johnstown, Pa. B2
11/16	24x480 to 150x360	SparrowsPt., Md. B2
11/16	24x520 to 138x384	Munhall, Pa. U5
11/16	24x720 to 84x458	S.Chicago, Ill. U5
11/16	over 36x600 to 96x400	Fairfield, Ala. T2
11/16	48x480 to 96x320	Geneva, Utah C11
11/16	88x600 to 138x315	Gary, Ind. U5
¾	16x132 to 120x380	Johnstown, Pa. B2
¾	24x480 to 150x360	SparrowsPt., Md. B2
¾	24x520 to 138x384	Munhall, Pa. U5
¾	24x720 to 84x420	S.Chicago, Ill. U5
¾	30x480 to 92x240	Ind.Harbor, Ind. I-2
¾*	36x480 to 72x396	Lackawanna, N.Y. B2
¾	over 36x600 to 96x400	Fairfield, Ala. T2
¾*	42x480 to 72x337	Youngstown Y1
¾	48x480 to 96x280	Geneva, Utah C11
¾	48x480 to 108x432	Houston S5
¾	78x540 to 138x330	Gary, Ind. U5
13/16	16x132 to 120x300	Johnstown, Pa. B2
13/16	24x480 to 150x360	SparrowsPt., Md. B2
13/16	24x495 to 138x384	Munhall, Pa. U5
13/16	over 36x600 to 96x400	Fairfield, Ala. T2
13/16	48x480 to 96x260	Geneva, Utah C11
⅞	16x132 to 120x290	Johnstown, Pa. B2
⅞	24x480 to 150x360	SparrowsPt., Md. B2
⅞	24x495 to 138x384	Munhall, Pa. U5
⅞	30x480 to 72x282	Ind.Harbor, Ind. I-2
⅞*	36x480 to 72x288	Youngstown Y1
⅞*	36x480 to 72x336	Lackawanna, N.Y. B2
⅞	over 36x600 to 96x400	Fairfield, Ala. T2
⅞	48x480 to 96x240	Geneva, Utah C11
⅞	48x480 to 108x372	Houston S5
⅞	54x600 to 138x360	Gary, Ind. U5
15/16	16x132 to 120x290	Johnstown, Pa. B2
1	16x132 to 120x280	Johnstown, Pa. B2
1	24x450 to 138x384	Munhall, Pa. U5
1	24x480 to 150x360	SparrowsPt., Md. B2
1*	26x432 to 72x253	Youngstown Y1
1	30x480 to 72x252	Ind.Harbor, Ind. I-2
1*	36x444 to 72x300	Lackawanna, N.Y. B2
1	over 36x600 to 96x400	Fairfield, Ala. T2
1	48x480 to 96x210	Geneva, Utah C11
1	48x480 to 108x324	Houston S5
1	54x600 to 138x350	Gary, Ind. U5
1⅛	24x450 to 138x384	Munhall, Pa. U5
1⅛	24x480 to 150x360	SparrowsPt., Md. B2
1⅛	30x480 to 72x222	Ind.Harbor, Ind. I-2
1⅛	31x475 to 120x250	Johnstown, Pa. B2
1⅛	over 36x600 to 96x400	Fairfield, Ala. T2
1⅛	48x480 to 90x260	Geneva, Utah C11
1⅛	48x480 to 108x288	Houston S5
1⅛	54x600 to 138x340	Gary, Ind. U5
1⅛	24x400 to 138x384	Munhall, Pa. U5
1¼	24x480 to 150x360	SparrowsPt., Md. B2
1¼	27x270 to 96x371	Fairfield, Ala. T2

* Strip mill plate.

PLATES

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Sheared or Flame Cut (high-strength)

Thickness (inches)	Max. Widths Max. Lengths or Size Range (inches)	Mill Point, Producer
1¼	30x468 to 72x198	Ind.Harbor,Ind. I-2
1¼	31x450 to 120x260	Johnstown,Pa. B2
1¼	48x480 to 90x230	Geneva,Utah C11
1¼	48x480 to 108x264	Houston S5
1¼	54x600 to 138x330	Gary,Ind. U5
1⅛–⅛	10-15x48-120	Fairfield,Ala. T2
1⅛–⅛	15-27x48-240	Fairfield,Ala. T2
1⅜	27x270 to 96x333	Fairfield,Ala. T2
1½	24x480 to 150x360	SparrowsPt.,Md. B2
1½	27x270 to 96x302	Fairfield,Ala. T2
1½	30x396 to 72x168	Ind.Harbor,Ind. I-2
1½	31x400 to 120x220	Johnstown,Pa. B2
1½	42x480 to 138x368	Munhall,Pa. U5
1½	48x440 to 84x240	Geneva,Utah C11
1½	54x600 to 138x320	Gary,Ind. U5
1⅝	27x270 to 96x280	Fairfield,Ala. T2
1⅝	24x206 to 72x138	Ind.Harbor,Ind. I-2
1⅝	24x480 to 150x360	SparrowsPt.,Md. B2
1⅝	27x270 to 96x257	Fairfield,Ala. T2
1⅝	31x360 to 120x170	Johnstown,Pa. B2
1⅝	42x480 to 138x316	Munhall,Pa. U5
1⅝	54x600 to 138x310	Gary,Ind. U5
1⅞	27x270 to 96x238	Fairfield,Ala. T2
2	24x180 to 72x120	Ind.Harbor,Ind. I-2
2	24x420 to 150x330	SparrowsPt.,Md. B2
2	27x270 to 96x221	Fairfield,Ala. T2
2	42x480 to 138x276	Munhall,Pa. U5
2	43x375 to 120x150	Johnstown,Pa. B2
2	54x600 to 138x300	Gary,Ind. U5
2¼	24x160 to 54x144	Ind.Harbor,Ind. I-2
2¼	27x270 to 96x192	Fairfield,Ala. T2
2¼	37x348 to 146x300	SparrowsPt.,Md. B2
2¼	54x600 to 138x265	Gary,Ind. U5
2½	24x148 to 54x130	Ind.Harbor,Ind. I-2
2½	27x265 to 96x169	Fairfield,Ala. T2
2½	37x313 to 146x270	SparrowsPt.,Md. B2
2½	54x540 to 138x240	Gary,Ind. U5
2⅝	27x240 to 96x151	Fairfield,Ala. T2
2¾	37x285 to 146x245	SparrowsPt.,Md. B2
2¾	54x480 to 138x220	Gary,Ind. U5
3	27x215 to 96x141	Fairfield,Ala. T2
3	37x261 to 146x225	SparrowsPt.,Md. B2
3	54x460 to 138x200	Gary,Ind. U5
3¼	54x420 to 132x195	Gary,Ind. U5
3½	27x185 to 96x127	Fairfield,Ala. T2
3½	37x223 to 146x190	SparrowsPt.,Md. B2
3½	54x400 to 132x180	Gary,Ind. U5
3¾	54x380 to 132x170	Gary,Ind. U5
4	27x156 to 96x108	Fairfield,Ala. T2
4	37x196 to 146x170	SparrowsPt.,Md. B2
4	54x360 to 132x160	Gary,Ind. U5
4½	37x174 to 146x150	SparrowsPt.,Md. B2
4½	38x239 to 92x98	Fairfield,Ala. T2
5	37x156 to 138x145	SparrowsPt.,Md. B2
5	38x218 to 92x92	Fairfield,Ala. T2
5½	37x142 to 132x135	SparrowsPt.,Md. B2
5½	38x197 to 84x91	Fairfield,Ala. T2
6	37x130 to 126x130	SparrowsPt.,Md. B2
6	38x179 to 80x87	Fairfield,Ala. T2
6½	37x120 to 120x125	SparrowsPt.,Md. B2
6½	38x164 to 80x79	Fairfield,Ala. T2
7	37x111 to 114x125	SparrowsPt.,Md. B2
7	38x152 to 72x79	Fairfield,Ala. T2
7½	37x103 to 114x115	SparrowsPt.,Md. B2
7½	38x141 to 72x73	Fairfield,Ala. T2
8	37x97 to 108x115	SparrowsPt.,Md. B2
8	38x131 to 66x74	Fairfield,Ala. T2
8½	37x92 to 102x115	SparrowsPt.,Md. B2
9	37x87 to 102x110	SparrowsPt.,Md. B2
9½	37x81 to 96x108	SparrowsPt.,Md. B2
10	37x77 to 96x100	SparrowsPt.,Md. B2
10½	37x74 to 96x98	SparrowsPt.,Md. B2
11	37x71 to 90x100	SparrowsPt.,Md. B2
11½	37x68 to 90x95	SparrowsPt.,Md. B2
12	37x65 to 90x93	SparrowsPoint,Md. B2
12½	37x62 to 84x94	SparrowsPoint,Md. B2
13	37x59 to 84x90	SparrowsPoint,Md. B2
13½	37x57 to 84x87	SparrowsPoint,Md. B2
14	37x55 to 84x84	SparrowsPoint,Md. B2
Check with mill for sizes*		Ashland,Ky. A10

*Strip mill plate.

Sheared or Flame Cut (alloy)

.180	48⅛x600 to 90x360	Munhall,Pa. U5
⅛	48⅛x720 to 88¼x720	S.Chicago,Ill. U5
⅛	48⅛x900 to138x300	Munhall,Pa. U5
⅛	54x650 to 108x500	Coatesville,Pa. L7
⅛	60x480 to 84x480	Houston S5
⅛-under ½*	66x360	Youngstown Y1
⅛–⅜*	24x360 to 84x360	Pittsburgh J5
⅛–⅜	24-72 x up to 300	Conshohocken,Pa. A3
.230*	over 6-8 x up to 360	Youngstown U5
.230*	over 6-10 x up to 504	Gary,Ind. U5
.230*	10-15 x up to 240	Youngstown U5
.230*	over 15-38 x up to 360	Youngstown U5
.230	24x720 to 88¼x720	So.Chicago,Ill. U5
.230	24x720 to 138x300	Munhall,Pa. U5
.230*	over 10-32 x up to 624	Gary,Ind. U5
.230–.249	48x120	Newport,Ky. N9
¼	24x360 to 126x350	Coatesville,Pa. L7
¼	24x720 to 88¼x720	So.Chicago,Ill. U5
¼	24x720 to 150x450	Munhall,Pa. U5
¼	48x480 to 96x480	Houston S5
¼–⅓	48x96	Newport,Ky. N9
¼–⅜*	over 6-8 x up to 480	Youngstown U5
¼–⅜*	10-38 x up to 360	Youngstown U5
¼–⅜*	over 6-10 x up to 504	Gary,Ind. U5
¼–⅜*	over 30-32 x up to 624	Gary,Ind. U5
¼–⅜*	over 10-30 up to 624	Gary,Ind. U5
5/16	24x360 to 150x310	Coatesville,Pa. L7
5/16	24x600 to 144x320	Claymont,Del. C22
5/16	24x720 to 88x720	SouthChicago,Ill. U5
5/16	24x900 to 150x450	Munhall,Pa. U5
5/16	48x480 to 108x480	Houston S5
⅜	24x360 to 195x250	Coatesville,Pa. L7
⅜	24x600 to 144x300	Claymont,Del. C22
⅜	24x720 to 88x720	SouthChicago,Ill. U5
⅜	24x900 to 150x480	Munhall,Pa. U5
⅜	over 32x300 to 60x300	Economy,Pa. B14
⅜	48x84	Newport,Ky. N9
⅜	48x480 to 108x480	Houston S5
over ⅜-½*	10-24 x up to 360	Youngstown U5
7/16	24x360 to 195x250	Coatesville,Pa. L7
7/16	24x600 to 144x360	Claymont,Del. C22
7/16	24x720 to 88x660	SouthChicago,Ill. U5
7/16	24x900 to 150x480	Munhall,Pa. U5
7/16	over 32x300 to 90x300	Economy,Pa. B14
7/16–½	40x84	Newport,Ky. N9
½	24x360 to 195x250	Coatesville,Pa. L7
½	24x600 to 144x380	Claymont,Del. C22
½	24x720 to 88x630	SouthChicago,Ill. U5
½	24x900 to 150x480	Munhall,Pa. U5
½	over 32x300 to 72x300	Economy,Pa. B14
½	48x480 to 108x480	Houston S5
½–1*	72x260	Youngstown Y1
9/16	24x360 to 195x250	Coatesville,Pa. L7
9/16	24x600 to 144x380	Claymont,Del. C22
9/16	24x720 to 84x576	SouthChicago,Ill. U5
9/16	24x900 to 150x480	Munhall,Pa. U5
⅝	24x360 to 195x250	Coatesville,Pa. L7
⅝	24x600 to 144x380	Claymont,Del. C22
⅝	24x720 to 84x515	SouthChicago,Ill. U5
⅝	24x900 to 150x500	Munhall,Pa. U5
⅝	over 32x300 to 72x300	Economy,Pa. B14
⅝	48x480 to 108x480	Houston S5
over ⅝–¾*	over 6-10 x up to 384	Gary,Ind. U5
⅝–2	20x96	Newport,Ky. N9
11/16	24x360 to 195x250	Coatesville,Pa. L7
11/16	24x600 to 144x396	Claymont,Del. C22
11/16	24x720 to 84x458	SouthChicago,Ill. U5
11/16	24x900 to 150x540	Munhall,Pa. U5
¾*	24x360 to 84x305	Pittsburgh J5
¾	24x360 to 195x250	Coatesville,Pa. L7
¾	24x600 to 144x380	Claymont,Del. C22
¾	24x720 to 84x420	SouthChicago,Ill. U5
¾	24x900 to 150x540	Munhall,Pa. U5
¾	over 82x300 to 72x264	Economy,Pa. B14
¾	48x480 to 108x432	Houston S5
13/16	24x495 to 150x540	Munhall,Pa. U5
13/16	24x360 to 195x250	Coatesville,Pa. L7
13/16	24x495 to 150x540	Munhall,Pa. U5
13/16	24x600 to 144x380	Claymont,Del. C22
13/16	over 32x300 to 72x216	Economy,Pa. B14
13/16	48x480 to 108x372	Houston S5
1*	24x360 to 84x229	Pittsburgh J5
1	24x360 to 195x250	Coatesville,Pa. L7
1	24x450 to 150x540	Munhall,Pa. U5
1	24x600 to 144x380	Claymont,Del. C22
1	over 32x300 to 72x192	Economy,Pa. B14
1	48x480 to 108x324	Houston S5
1⅛	24x360 to 195x250	Coatesville,Pa. L7
1⅛	24x450 to 150x540	Munhall,Pa. U5
1⅛	24x600 to 144x348	Claymont,Del. C22
1⅛	48x480 to 108x288	Houston S5
1⅛*	24x360 to 84x183	Pittsburgh J5
1⅛	24x360 to 195x250	Coatesville,Pa. L7
1⅛	24x400 to 150x540	Munhall,Pa. U5
1⅛	24x600 to 144x348	Claymont,Del. C22
1⅛	over 32x240 to 72x156	Economy,Pa. B14
1⅛	48x480 to 108x264	Houston S5
1⅜	24x360 to 195x250	Coatesville,Pa. L7
1⅜	24x600 to 144x320	Claymont,Del. C22
1½*	24x334 to 84x153	Pittsburgh J5
1½	24x360 to 195x250	Coatesville,Pa. L7
1½	24x400 to 150x540	Munhall,Pa. U5
1½	24x600 to 144x340	Claymont,Del. C22
1½	over 32x192 to 72x132	Economy,Pa. B14
1⅝	24x360 to 195x250	Coatesville,Pa. L7
1⅝	24x544 to 144x300	Claymont,Del. C22
1⅝	over 32x168 to 72x108	Economy,Pa. B14
1⅝	42x500 to 150x540	Munhall,Pa. U5
2*	24x250 to 84x114	Pittsburgh J5
2	24x360 to 195x250	Coatesville,Pa. L7
2	24x544 to 144x300	Claymont,Del. C22
2	over 32x144 to 72x96	Economy,Pa. B14
2	42x500 to 150x480	Munhall,Pa. U5
2⅛	24x544 to 138x283	Claymont,Del. C22
2⅛	24x600 to 195x225	Coatesville,Pa. L7
2⅛	42x500 to 150x382	Munhall,Pa. U5
2⅛	24x491 to 138x256	Claymont,Del. C22
2⅛	24x600 to 195x225	Coatesville,Pa. L7
2⅛	over 32x120 to 72x78	Economy,Pa. B14
2⅛	42x500 to 150x343	Munhall,Pa. U5
2¼	24x442 to 138x230	Claymont,Del. C22
2¼	24x600 to 195x225	Coatesville,Pa. L7
3	24x408 to 138x212	Claymont,Del. C22
3	24x560 to 195x225	Coatesville,Pa. L7
3	over 32x96 to 60x78	Economy,Pa. B14
3	42x500 to150x284	Munhall,Pa. U5
3¼	24x376 to 132x205	Claymont,Del. C22
3¼	24x520 to 195x195	Coatesville,Pa. L7
3½	24x350 to 132x190	Claymont,Del. C22
3½	24x480 to 195x195	Coatesville,Pa. L7
3½	over 46x500 to 150x243	Munhall,Pa. U5
3¾	24x328 to 132x178	Claymont,Del. C22
3¾	24x450 to 195x195	Coatesville,Pa. L7
4	24x306 to 132x166	Claymont,Del. C22
4	24x420 to 195x195	Coatesville,Pa. L7
4	over 46x500 to 150x212	Munhall,Pa. U5
4¼	24x288 to 132x157	Claymont,Del. C22
4½	24x262 to 132x142	Claymont,Del. C22
4½	24x375 to 195x195	Coatesville,Pa. L7
4½	over 46x494 to 150x185	Munhall,Pa. U5
4¾	24x258 to 132x140	Claymont,Del. C22
5	24x246 to 132x134	Claymont,Del. C22
5	24x335 to 195x195	Coatesville,Pa. L7
5	over 46x440 to 150x165	Munhall,Pa. U5
5¼	24x232 to 126x132	Claymont,Del. C22
5½	24x224 to 126x128	Claymont,Del. C22
5½	24x305 to 195x195	Coatesville,Pa. L7
5½	over 46x398 to 144x158	Munhall,Pa. U5
5¾	24x212 to 126x121	Claymont,Del. C22
6	24x206 to 126x117	Claymont,Del. C22
6	24x280 to 195x195	Coatesville,Pa. L7
6	over 46x364 to 138x150	Munhall,Pa. U5
6 and over	Check with mill	Claymont,Del. C22
6½	24x260 to 195x195	Coatesville,Pa. L7
6½	over 46x337 to 138x138	Munhall,Pa. U5
7	24x240 to 195x195	Coatesville,Pa. L7
7	over 46x311 to 132x133	Munhall,Pa. U5
7½	24x225 to 186x185	Coatesville,Pa. L7
7½	over 46x292 to 126x130	Munhall,Pa. U5
8	24x210 to 180x160	Coatesville,Pa. L7
8	over 46x279 to 120x128	Munhall,Pa. U5
8½	24x198 to 174x220	Coatesville,Pa. L7
8½	over 46x257 to 114x129	Munhall,Pa. U5
9	24x187 to 174x205	Coatesville,Pa. L7
9	over 46x244 to 108x127	Munhall,Pa. U5
9½	over 46x229 to 102x128	Munhall,Pa. U5
10	24x168 to 174x185	Coatesville,Pa. L7
10	over 46x218 to 96x128	Munhall,Pa. U5
10½	over 46x205 to 90x130	Munhall,Pa. U5
11	24x153 to 174x170	Coatesville,Pa. L7
11	over 46x198 to 84x137	Munhall,Pa. U5
11½	over 46x190 to 84x132	Munhall,Pa. U5
12	24x140 to 162x165	Coatesville,Pa. L7
12	over 46x181 to 84x128	Munhall,Pa. U5
12½	over 46x177 to 78x128	Munhall,Pa. U5
13	24x129 to 156x160	Coatesville,Pa. L7
13	over 46x168 to 72x134	Munhall,Pa. U5
13½	over 46x161 to 72x127	Munhall,Pa. U5
14	24x120 to 150x155	Coatesville,Pa. L7
14	over 46x156 to 66x133	Munhall,Pa. U5
14½	over 46x150 to 66x128	Munhall,Pa. U5
15	24x112 to 144x150	Coatesville,Pa. L7
15	over 46x145 to 60x137	Munhall,Pa. U5
16	36x139 to 138x140	Coatesville,Pa. L7
17	36x131 to 132x135	Coatesville,Pa. L7
18	36x123 to 126x135	Coatesville,Pa. L7
19	36x117 to 126x130	Coatesville,Pa. L7
20	36x111 to 120x130	Coatesville,Pa. L7
21	54x99 to 120x120	Coatesville,Pa. L7
22	54x94 to 114x120	Coatesville,Pa. L7
23	54x90 to 114x115	Coatesville,Pa. L7
24	54x86 to 108x115	Coatesville,Pa. L7
25	54x83 to 108x110	Coatesville,Pa. L7
Check with mill for sizes		Fontana,Calif. K1

*Strip mill plate.

PLATES

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Universal (carbon)

Thickness (inches)	Max. Widths Max. Lengths or Size Range (inches)	Mill Point, Producer
3/16–9	20-40x60-240	Midland,Pa. C18
.230	over 6x1080 to 7x1080	Clairton,Pa. U5
.230	6 1/8x480 to 13x480	Aliquippa,Pa. J5
.230	8 1/2x1080 to 24x960	So.Chicago,Ill. U5
.230-.750	24 1/2-42 x up to 144	Mansfield,O. E6
1/4	over 6x1080 to 10x1080	Clairton,Pa. U5
1/4	6 1/4x960 to 36x720	Johnstown,Pa. B2
1/4	6 1/4x780 to 26x780	Ind.Harbor,Ind. I-2
1/4	6 1/2x480 to 13x480	Aliquippa,Pa. J5
1/4	7x72 to 16x252	Fontana,Calif. K1
1/4	7x960 to 20x720	Seattle B3
1/4	8 1/2x1320 to 30x960	So.Chicago,Ill. U5
1/4	10x865 to 42x600	Fairfield,Ala. T2
1/4	10x1060 to 36x600	Munhall,Pa. U5
1/4	10x1440 to 58x360	SparrowsPt.,Md. B2
1/4	12x300 to 32x300	Economy,Pa. B14
1/4	16x960 to 36x780	Harrisburg,Pa. C5
1/4–5/16	8 x up to 480	Minnequa,Colo. C10
1/4–5/16	10 x up to 480	Minnequa,Colo. C10
1/4–1 1/4	22x372	Sharon,Pa. S3
1/4–2	7 x up to 480	Minnequa,Colo. C10
1/4–2	9 x up to 480	Minnequa,Colo. C10
1/4–2 1/2	6 1/8x120 to 30x480	So.Chicago,Ill. W14
1/4–3	12 x up to 480	Minnequa,Colo. C10
5/16	over 6x1080 to 10x1080	Clairton,Pa. U5
5/16	6 1/4x960 to 36x960	Johnstown,Pa. B2
5/16	6 1/4x780 to 26x780	Ind.Harbor,Ind. I-2
5/16	6 1/2x780 to 15x780	Aliquippa,Pa. J5
5/16	7x72 to 16x252	Fontana,Calif. K1
5/16	7x960 to 20x720	Seattle B3
5/16	8 1/2x1320 to 30x1080	So.Chicago,Ill. U5
5/16	10x865 to 42x600	Fairfield,Ala. T2
5/16	10x1200 to 45x600	Munhall,Pa. U5
5/16	10x1440 to 60x360	SparrowsPt.,Md. B2
5/16	12x300 to 32x300	Economy,Pa. B14
5/16	16x960 to 36x900	Harrisburg,Pa. C5
3/8	over 6x1080 to 10x1080	Clairton,Pa. U5
3/8	6 1/4x960 to 36x960	Johnstown,Pa. B2
3/8	6 1/4x780 to 26x780	Ind.Harbor,Ind. I-2
3/8	6 1/2x780 to 15x780	Aliquippa,Pa. J5
3/8	7x72 to 16x252	Fontana,Calif. K1
3/8	7x1140 to 22x1008	Seattle B3
3/8	8 1/2x1320 to 30x1200	So.Chicago,Ill. U5
3/8	10x865 to 42x865	Fairfield,Ala. T2
3/8	10x1200 to 45x1080	Munhall,Pa. U5
3/8	10x1440 to 60x480	SparrowsPt.,Md. B2
3/8	12x300 to 32x300	Economy,Pa. B14
3/8	12x960 to 42x720	Harrisburg,Pa. C5
3/8–2 1/2	8 x up to 480	Minnequa,Colo. C10
3/8–3	10 x up to 480	Minnequa,Colo. C10
7/16	over 6x1080 to 10x984	Clairton,Pa. U5
7/16	6 1/4x960 to 36x960	Johnstown,Pa. B2
7/16	6 1/4x780 to 26x780	Ind.Harbor,Ind. I-2
7/16	6 1/2x780 to 15x780	Aliquippa,Pa. J5
7/16	7x1140 to 22x864	Seattle B3
7/16	8 1/2x1320 to 30x1320	So.Chicago,Ill. U5
7/16	10x865 to 42x865	Fairfield,Ala. T2
7/16	10x960 to 42x720	Harrisburg,Pa. C5
7/16	10x1200 to 48x1080	Munhall,Pa. U5
7/16	10x1440 to 60x480	SparrowsPt.,Md. B2
7/16	12x300 to 32x300	Economy,Pa. B14
1/2	over 6x1080 to 10x912	Clairton,Pa. U5
1/2	6 1/4x960 to 36x960	Johnstown,Pa. B2
1/2	6 1/4x780 to 26x780	Ind.Harbor,Ind. I-2
1/2	6 1/2x780 to 15x780	Aliquippa,Pa. J5
1/2	7x1140 to 22x768	Seattle B3
1/2	8x960 to 42x720	Harrisburg,Pa. C5
1/2	8 1/2x1320 to 30x1320	So.Chicago,Ill. U5
1/2	10x865 to 44x865	Fairfield,Ala. T2
1/2	10x1200 to 48x1080	Munhall,Pa. U5
1/2	10x1440 to 60x480	SparrowsPt.,Md. B2
1/2	12x300 to 32x300	Economy,Pa. B14
9/16	over 6x1080 to 10x804	Clairton,Pa. U5
9/16	6 1/4x960 to 36x960	Johnstown,Pa. B2
9/16	6 1/4x780 to 26x780	Ind.Harbor,Ind. I-2
9/16	6 1/2x780 to 15x780	Aliquippa,Pa. J5
9/16	7x1140 to 22x684	Seattle B3
9/16	8 1/2x1320 to 30x1320	So.Chicago,Ill. U5
9/16	10x865 to 44x865	Fairfield,Ala. T2
9/16	10x1200 to 48x1200	Munhall,Pa. U5
9/16	10x1440 to 60x480	SparrowsPt.,Md. B2
5/8	over 6x1080 to 10x720	Clairton,Pa. U5
5/8	6 1/4x960 to 36x960	Johnstown,Pa. B2
5/8	6 1/4x780 to 26x780	Ind.Harbor,Ind. I-2
5/8	6 1/2x780 to 15x780	Aliquippa,Pa. J5
5/8	7x120 to 16x480	Fontana,Calif. K1
5/8	7x1140 to 22x612	Seattle B3
5/8	8x960 to 42x720	Harrisburg,Pa. C5
5/8	8 1/2x1320 to 30x1320	So.Chicago,Ill. U5
5/8	10x865 to 44x865	Fairfield,Ala. T2
5/8	10x1200 to 48x1200	Munhall,Pa. U5
5/8	10x1440 to 60x480	SparrowsPt.,Md. B2
5/8	12x300 to 32x300	Economy,Pa. B14
11/16	6 1/4x780 to 26x780	Ind.Harbor,Ind. I-2
11/16	6 1/2x780 to 15x780	Aliquippa,Pa. J5
11/16	8 1/2x1320 to 30x1320	So.Chicago,Ill. U5
11/16	10x865 to 44x865	Fairfield,Ala. T2
11/16	over 6x924 to 10x684	Clairton,Pa. U5
11/16	6 1/4x960 to 36x960	Johnstown,Pa. B2
11/16	6 1/4x780 to 26x780	Ind.Harbor,Ind. I-2
11/16	6 1/2x780 to 15x780	Aliquippa,Pa. J5
11/16	7x120 to 16x480	Fontana,Calif. K1
11/16	7x1140 to 22x504	Seattle B3
11/16	8x960 to 42x660	Harrisburg,Pa. C5
11/16	8 1/2x1320 to 30x1320	So.Chicago,Ill. U5
11/16	10x865 to 44x865	Fairfield,Ala. T2
11/16	10x1200 to 48x1200	Munhall,Pa. U5
11/16	10x1440 to 60x480	SparrowsPt.,Md. B2
11/16	12x300 to 32x300	Economy,Pa. B14
3/4	6 1/8x1200 to 30x1320	So.Chicago,Ill. U5
3/4	6 1/4x696 to 26x780	Ind.Harbor,Ind. I-2
3/4	6 1/2x780 to 15x780	Aliquippa,Pa. J5
3/4	10x865 to 44x865	Fairfield,Ala. T2
3/4	over 6x888 to 10x588	Clairton,Pa. U5
3/4	6 1/8x1200 to 30x1320	So.Chicago,Ill. U5
3/4	6 1/4x840 to 36x828	Johnstown,Pa. B2
3/4	6 1/4x696 to 26x780	Ind.Harbor,Ind. I-2
3/4	6 1/2x780 to 15x780	Aliquippa,Pa. J5
3/4	7x120 to 16x480	Fontana,Calif. K1
3/4	7x1056 to 22x420	Seattle B3
3/4	8x960 to 42x600	Harrisburg,Pa. C5
3/4	10x865 to 44x865	Fairfield,Ala. T2
3/4	10x1200 to 48x1169	Munhall,Pa. U5
3/4	10x1200 to 60x480	SparrowsPt.,Md. B2
3/4	12x300 to 32x300	Economy,Pa. B14
13/16	6 1/8x1200 to 30x1260	So.Chicago,Ill. U5
13/16	6 1/2x780 to 15x780	Aliquippa,Pa. J5
1	over 6x768 to 10x504	Clairton,Pa. U5
1	6 1/8x1200 to 30x1182	So.Chicago,Ill. U5
1	6 1/4x720 to 36x732	Johnstown,Pa. B2
1	6 1/4x624 to 26x780	Ind.Harbor,Ind. I-2
1	6 1/2x780 to 15x780	Aliquippa,Pa. J5
1	7x120 to 16x480	Fontana,Calif. K1
1	7x924 to 22x372	Seattle B3
1	8x960 to 42x480	Harrisburg,Pa. C5
1	10x865 to 44x865	Fairfield,Ala. T2
1	10x1104 to 60x480	SparrowsPt.,Md. B2
1	10x1200 to 48x1023	Munhall,Pa. U5
1	12x300 to 32x300	Economy,Pa. B14
1 1/16	over 6x708 to 10x528	Clairton,Pa. U5
1 1/16	6 1/8x1080 to 30x1032	So.Chicago,Ill. U5
1 1/16	6 1/4x660 to 36x660	Johnstown,Pa. B2
1 1/16	6 1/2x780 to 15x780	Aliquippa,Pa. J5
1 1/16	7x804 to 22x324	Seattle B3
1 1/16	10x865 to 44x865	Fairfield,Ala. T2
1 1/16	10x984 to 60x480	SparrowsPt.,Md. B2
1 1/16	10x1200 to 48x910	Munhall,Pa. U5
1 1/8	over 6x636 to 10x480	Clairton,Pa. U5
1 1/8	6 1/8x972 to 30x936	So.Chicago,Ill. U5
1 1/8	6 1/4x576 to 36x576	Johnstown,Pa. B2
1 1/8	6 1/4x576 to 26x576	Ind.Harbor,Ind. I-2
1 1/8	6 1/2x780 to 15x600	Aliquippa,Pa. J5
1 1/8	7x120 to 16x480	Fontana,Calif. K1
1 1/8	7x732 to 22x300	Seattle B3
1 1/8	8x960 to 42x408	Harrisburg,Pa. C5
1 1/8	10x865 to 44x865	Fairfield,Ala. T2
1 1/8	10x900 to 60x480	SparrowsPt.,Md. B2
1 1/8	10x1200 to 48x819	Munhall,Pa. U5
1 1/8	12x300 to 32x300	Economy,Pa. B14
1 3/16	over 6x612 to 10x456	Clairton,Pa. U5
1 3/16	over 6x576 to 10x432	Clairton,Pa. U5
1 3/16	6 1/8x888 to 30x846	So.Chicago,Ill. U5
1 3/16	6 1/4x528 to 36x528	Johnstown,Pa. B2
1 3/16	6 1/2x780 to 15x480	Aliquippa,Pa. J5
1 3/16	7x672 to 22x264	Seattle B3
1 3/16	10x816 to 60x480	SparrowsPt.,Md. B2
1 3/16	10x965 to 44x806	Fairfield,Ala. T2
1 3/16	10x1200 to 47x759	Munhall,Pa. U5
1 1/4	over 6x528 to 10x396	Clairton,Pa. U5
1 1/4	6 1/8x804 to 30x792	So.Chicago,Ill. U5
1 1/4	6 1/4x480 to 36x480	Johnstown,Pa. B2
1 1/4	6 1/4x480 to 26x576	Ind.Harbor,Ind. I-2
1 1/4	6 1/2x780 to 15x480	Aliquippa,Pa. J5
1 1/4	7x120 to 16x480	Fontana,Calif. K1
1 1/4	7x612 to 22x240	Seattle B3
1 1/4	8x960 to 42x336	Harrisburg,Pa. C5
1 1/4	10x744 to 60x480	SparrowsPt.,Md. B2
1 1/4	10x865 to 44x735	Fairfield,Ala. T2
1 1/4	10x1195 to 47x696	Munhall,Pa. U5
1 1/4	12x300 to 32x300	Economy,Pa. B14
1 5/16	over 6x492 to 10x360	Clairton,Pa. U5
1 5/16	6 1/8x744 to 30x714	So.Chicago,Ill. U5
1 5/16	6 1/4x444 to 36x444	Johnstown,Pa. B2
1 5/16	7x564 to 8x492	Seattle B3
1 5/16	10-30x165-865	Fairfield,Ala. T2
1 5/16	10x672 to 58x1200	SparrowsPt.,Md. B2
1 5/16	10x1103 to 47x240	Munhall,Pa. U5
1 3/8	over 6x456 to 10x336	Clairton,Pa. U5
1 3/8	6 1/8x684 to 30x660	So.Chicago,Ill. U5
1 3/8	6 1/4x408 to 36x408	Johnstown,Pa. B2
1 3/8	6 1/4x420 to 26x492	Ind.Harbor,Ind. I-2
1 3/8	7x528 to 8x456	Seattle B3
1 3/8	8x960 to 42x288	Harrisburg,Pa. C5
1 3/8	10-30x155-965	Fairfield,Ala. T2
1 3/8	10x624 to 58x1140	SparrowsPt.,Md. B2
1 3/8	10x1025 to 47x240	Munhall,Pa. U5
1 3/8	12x300 to 32x300	Economy,Pa. B14
1 7/16	over 6x420 to 10x312	Clairton,Pa. U5
1 7/16	6 1/8x636 to 30x624	So.Chicago,Ill. U5
1 7/16	6 1/4x384 to 36x384	Johnstown,Pa. B2
1 7/16	7x492 to 8x432	Seattle B3
1 7/16	10-30x145-865	Fairfield,Ala. T2
1 7/16	10x600 to 58x1080	SparrowsPt.,Md. B2
1 7/16	10x956 to 47x240	Munhall,Pa. U5
2	over 6x396 to 10x288	Clairton,Pa. U5
2	6 1/8x600 to 30x576	So.Chicago,Ill. U5
2	6 1/4x372 to 36x372	Johnstown,Pa. B2
2	6 1/4x360 to 26x360	Ind.Harbor,Ind. I-2
2	7x456 to 8x408	Seattle B3
2	8x960 to 42x240	Harrisburg,Pa. C5
2	10-30x135-800	Fairfield,Ala. T2
2	10x552 to 58x960	SparrowsPt.,Md. B2
2	10x897 to 47x240	Munhall,Pa. U5
2	12x300 to 32x300	Economy,Pa. B14
2 1/16	over 6x372 to 10x276	Clairton,Pa. U5
2 1/16	over 6x348 to 10x264	Clairton,Pa. U5
2 1/16	6 1/8x528 to 30x510	So.Chicago,Ill. U5
2 1/16	6 1/4x336 to 37x336	Johnstown,Pa. B2
2 1/16	8x960 to 40x336	Harrisburg,Pa. C5
2 1/16	8 3/8 x up to 480	Minnequa,Colo. C10
2 1/16	10x764 to 46x240	Munhall,Pa. U5
2 1/16	10x765 to 58x810	SparrowsPt.,Md. B2
2 1/8	over 6x336 to 10x240	Clairton,Pa. U5
2 1/8	over 6x348 to 10x240	Clairton,Pa. U5
2 1/8	over 6x336 to 10x228	Clairton,Pa. U5
2 1/8	6 1/8x468 to 30x456	So.Chicago,Ill. U5
2 1/8	6 1/4x300 to 37x300	Johnstown,Pa. B2
2 1/8	8x960 to 40x300	Harrisburg,Pa. C5
2 1/8	10x688 to 46x240	Munhall,Pa. U5
2 1/8	10x690 to 58x730	SparrowsPt.,Md. B2
2 1/8	12x300 to 32x216	Economy,Pa. B14
2 3/16	over 6x324 to 8x252	Clairton,Pa. U5
2 3/16	over 6x300 to 8x240	Clairton,Pa. U5
2 3/16	6 1/8x420 to 30x414	So.Chicago,Ill. U5
2 3/16	6 1/4x276 to 37x276	Johnstown,Pa. B2
2 3/16	10x625 to 58x665	SparrowsPt.,Md. B2
2 3/16	over 6x288 to 8x228	Clairton,Pa. U5
2 1/4	over 6x276 to 8x216	Clairton,Pa. U5
2 1/4	6 1/4x240 to 37x240	Johnstown,Pa. B2
2 1/4	7 1/2x438 to 30x378	So.Chicago,Ill. U5
2 1/4	10x573 to 46x333	Munhall,Pa. U5
2 1/4	10x575 to 58x610	SparrowsPt.,Md. B2
2 1/4	12x240 to 32x180	Economy,Pa. B14
2 5/16	7 1/2x372 to 30x324	So.Chicago,Ill. U5
2 5/16	10x490 to 58x520	SparrowsPt.,Md. B2
2 5/16	10x491 to 46x286	Munhall,Pa. U5
2 3/8	7 1/2x324 to 30x282	So.Chicago,Ill. U5
2 3/8	10x430 to 46x250	Munhall,Pa. U5
2 3/8	10x430 to 58x455	SparrowsPt.,Md. B2
2 3/8	7 1/2x282 to 30x246	So.Chicago,Ill. U5
2 3/8	10x380 to 58x406	SparrowsPt.,Md. B2
2 3/8	10x382 to 46x222	Munhall,Pa. U5
2 7/16	8x252 to 30x222	So.Chicago,Ill. U5
2 7/16	10x343 to 46x200	Munhall,Pa. U5
2 7/16	10x345 to 58x365	SparrowsPt.,Md. B2
2 1/2	8x228 to 30x198	So.Chicago,Ill. U5
2 1/2	10x315 to 58x330	SparrowsPt.,Md. B2
2 1/2	over 11x264 to 46x183	Munhall,Pa. U5
2 9/16	8x210 to 30x180	So.Chicago,Ill. U5
2 9/16	10x290 to 58x305	SparrowsPt.,Md. B2
2 9/16	over 13x210 to 46x166	Munhall,Pa. U5
2 9/16	10x265 to 58x280	SparrowsPt.,Md. B2
2 9/16	over 13x194 to 46x154	Munhall,Pa. U5
2 5/8	10x245 to 58x260	SparrowsPt.,Md. B2
2 5/8	over 15x236 to 46x143	Munhall,Pa. U5
2 5/8	10x230 to 58x245	SparrowsPt.,Md. B2
2 5/8	over 15x220 to 46x132	Munhall,Pa. U5
2 11/16	10x215 to 58x230	SparrowsPt.,Md. B2
2 11/16	over 17x205 to 46x125	Munhall,Pa. U5
2 11/16	10x200 to 58x215	SparrowsPt.,Md. B2
2 11/16	over 17x192 to 46x117	Munhall,Pa. U5
2 11/16	10x190 to 58x205	SparrowsPt.,Md. B2
2 11/16	over 19x180 to 46x111	Munhall,Pa. U5
2 11/16	12x300 to 58x190	SparrowsPt.,Md. B2
2 11/16	over 21x161 to 46x105	Munhall,Pa. U5
2 11/16	12x290 to 58x180	SparrowsPt.,Md. B2
2 11/16	over 21x153 to 46x100	Munhall,Pa. U5
2 11/16	12x275 to 58x175	SparrowsPt.,Md. B2
2 11/16	over 23x145 to 46x95	Munhall,Pa. U5
2 11/16	12x260 to 58x165	SparrowsPt.,Md. B2
2 11/16	over 23x139 to 46x91	Munhall,Pa. U5
2 11/16	24x250 to 58x160	SparrowsPt.,Md. B2
2 11/16	over 25x138 to 46x87	Munhall,Pa. U5
2 11/16	24x240 to 58x150	SparrowsPt.,Md. B2
2 11/16	over 25x132 to 46x83	Munhall,Pa. U5
2 11/16	24x230 to 58x145	SparrowsPt.,Md. B2
2 11/16	over 25x127 to 46x80	Munhall,Pa. U5
2 11/16	over 27x122 to 46x77	Munhall,Pa. U5
2 11/16	over 27x117 to 46x74	Munhall,Pa. U5
2 11/16	over 29x108 to 46x71	Munhall,Pa. U5
2 11/16	over 29x104 to 46x69	Munhall,Pa. U5
2 11/16	over 31x94 to 46x66	Munhall,Pa. U5

PLATES

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Universal (alloy)

Thickness (inches)	Max. Widths Max. Lengths or Size Range (inches)	Mill Point, Producer
7/16–9	20-40x60-240	Midland,Pa. C18
.230	over 6x1080 to 7x1080	Clairton,Pa. U5
.230	6½x480 to 13x480	Aliquippa,Pa. J5
.230	8½x1080 to 24x960	So.Chicago,Ill. U5
¼	over 6x1080 to 10x1080	Clairton,Pa. U5
¼	6½x480 to 13x480	Aliquippa,Pa. J5
¼	8½x1320 to 30x960	So.Chicago,Ill. U5
¼	10x1080 to 36x600	Munhall,Pa. U5
¼	12x300 to 32x300	Economy,Pa. B14
¼–1¼	22x372	Sharon,Pa. S3
5/16	over 6x1080 to 10x1080	Clairton,Pa. U5
5/16	6½x780 to 15x780	Aliquippa,Pa. J5
5/16	8½x1320 to 30x1080	So.Chicago,Ill. U5
5/16	10x1200 to 45x600	Munhall,Pa. U5
5/16	12x300 to 32x300	Economy,Pa. B14
3/8	over 6x1080 to 10x1080	Clairton,Pa. U5
3/8	6½x780 to 15x780	Aliquippa,Pa. J5
3/8	8½x1320 to 30x1200	So.Chicago,Ill. U5
3/8	10x1200 to 45x1080	Munhall,Pa. U5
3/8	12x300 to 32x300	Economy,Pa. B14
7/16	over 6x1080 to 10x984	Clairton,Pa. U5
7/16	6½x780 to 15x780	Aliquippa,Pa. J5
7/16	8½x1320 to 30x1320	So.Chicago,Ill. U5
7/16	10x1200 to 48x1080	Munhall,Pa. U5
7/16	12x300 to 32x300	Economy,Pa. B14
½	over 6x1080 to 10x912	Clairton,Pa. U5
½	6½x780 to 15x780	Aliquippa,Pa. J5
½	8½x1320 to 30x1320	So.Chicago,Ill. U5
½	10x1200 to 48x1080	Munhall,Pa. U5
½	12x300 to 32x300	Economy,Pa. B14
9/16	over 6x1080 to 10x804	Clairton,Pa. U5
9/16	6½x780 to 15x780	Aliquippa,Pa. J5
9/16	8½x1320 to 30x1320	So.Chicago,Ill. U5
9/16	10x1200 to 48x1200	Munhall,Pa. U5
5/8	over 6x1080 to 10x720	Clairton,Pa. U5
5/8	6½x780 to 15x780	Aliquippa,Pa. J5
5/8	8½x1320 to 30x1320	So.Chicago,Ill. U5
5/8	10x1200 to 48x1200	Munhall,Pa. U5
5/8	12x300 to 32x300	Economy,Pa. B14
11/16	6½x780 to 15x780	Aliquippa,Pa. J5
11/16	8½x1320 to 30x1320	So.Chicago,Ill. U5
11/16	over 6x924 to 10x684	Clairton,Pa. U5
11/16	6½x780 to 15x780	Aliquippa,Pa. J5
11/16	8½x1320 to 30x1320	So.Chicago,Ill. U5
11/16	10x1200 to 48x1200	Munhall,Pa. U5
11/16	12x300 to 32x300	Economy,Pa. B14
11/16	6 1/10x1200 to 30x1320	So.Chicago,Ill. U5
11/16	6½x780 to 15x780	Aliquippa,Pa. J5
11/16	over 6x888 to 10x588	Clairton,Pa. U5
11/16	6 1/10x1200 to 30x1260	So.Chicago,Ill. U5
11/16	6½x780 to 15x780	Aliquippa,Pa. J5
1	over 6x768 to 10x504	Clairton,Pa. U5
1	6 1/10x1200 to 30x1182	So.Chicago,Ill. U5
1	6½x780 to 15x780	Aliquippa,Pa. J5
1	10x1200 to 48x1023	Munhall,Pa. U5
1	12x300 to 32x300	Economy,Pa. B14
1 1/16	over 6x708 to 10x528	Clairton,Pa. U5
1 1/16	6 1/10x1080 to 30x1032	So.Chicago,Ill. U5
1 1/16	6½x780 to 15x780	Aliquippa,Pa. J5
1 1/16	10x1200 to 48x910	Munhall,Pa. U5
1 1/8	over 6x636 to 10x480	Clairton,Pa. U5
1 1/8	6 1/10x972 to 30x936	So.Chicago,Ill. U5
1 1/8	6½x780 to 15x600	Aliquippa,Pa. J5
1 1/8	10x1200 to 48x819	Munhall,Pa. U5
1 1/8	12x300 to 32x300	Economy,Pa. B14
1 3/16	over 6x612 to 10x456	Clairton,Pa. U5
1 3/16	over 6x576 to 10x432	Clairton,Pa. U5
1 3/16	6 1/10x888 to 30x846	SouthChicago,Ill. U5
1 3/16	6½x780 to 15x480	Aliquippa,Pa. J5
1 3/16	10x1200 to 47x759	Munhall,Pa. U5
1 1/4	over 6x528 to 10x396	Clairton,Pa. U5
1 1/4	6 1/10x804 to 30x792	So.Chicago,Ill. U5
1 1/4	6½x780 to 15x480	Aliquippa,Pa. J5
1 1/4	10x1195 to 47x696	Munhall,Pa. U5
1 1/4	12x300 to 32x300	Economy,Pa. B14
1 5/16	over 6x492 to 10x360	Clairton,Pa. U5
1 5/16	6 1/10x744 to 30x714	So.Chicago,Ill. U5
1 5/16	10x1103 to 47x240	Munhall,Pa. U5
1 3/8	over 6x456 to 10x336	Clairton,Pa. U5
1 3/8	6 1/10x684 to 30x660	So.Chicago,Ill. U5
1 3/8	10x1025 to 47x240	Munhall,Pa. U5
1 3/8	12x300 to 32x300	Economy,Pa. B14
1 7/16	over 6x420 to 10x312	Clairton,Pa. U5
1 7/16	6 1/10x636 to 30x624	So.Chicago,Ill. U5
1 7/16	10x956 to 47x240	Munhall,Pa. U5
2	over 6x396 to 10x288	Clairton,Pa. U5
2	6 1/10x600 to 30x576	So.Chicago,Ill. U5
2	10x897 to 47x240	Munhall,Pa. U5
2	12x300 to 32x300	Economy,Pa. B14
2 1/16	over 6x372 to 10x276	Clairton,Pa. U5
2 1/16	over 6x348 to 10x264	Clairton,Pa. U5
2 1/16	6 1/10x528 to 30x510	So.Chicago,Ill. U5
2 1/16	10x764 to 46x240	Munhall,Pa. U5
2 1/8	over 6x336 to 10x240	Clairton,Pa. U5
2 1/8	over 6x348 to 10x240	Clairton,Pa. U5
2 1/16	over 6x336 to 10x228	Clairton,Pa. U5
2 1/16	6 1/10x468 to 30x456	So.Chicago,Ill. U5
2 1/16	10x688 to 46x240	Munhall,Pa. U5
2 1/16	12x300 to 32x216	Economy,Pa. B14
2 3/16	over 6x324 to 8x252	Clairton,Pa. U5
2 3/16	over 6x300 to 8x240	Clairton,Pa. U5
2 3/16	6 1/10x420 to 30x414	So.Chicago,Ill. U5
2 3/16	over 6x288 to 8x228	Clairton,Pa. U5
3	over 6x276 to 8x216	Clairton,Pa. U5
3	7½x438 to 30x378	So.Chicago,Ill. U5
3	10x573 to 46x333	Munhall,Pa. U5
3	12x240 to 32x180	Economy,Pa. B14
3 1/16	7½x372 to 30x324	So.Chicago,Ill. U5
3 1/16	10x491 to 46x286	Munhall,Pa. U5
4	7½x324 to 30x282	So.Chicago,Ill. U5
4	10x430 to 46x250	Munhall,Pa. U5
4 1/16	7½x282 to 30x246	So.Chicago,Ill. U5
4 1/16	10x382 to 46x222	Munhall,Pa. U5
5	8x252 to 30x222	So.Chicago,Ill. U5
5	10x343 to 46x200	Munhall,Pa. U5
5 1/16	8x228 to 30x198	So.Chicago,Ill. U5
5 1/16	over 11x264 to 46x183	Munhall,Pa. U5
6	8x210 to 30x180	So.Chicago,Ill. U5
6	over 13x210 to 46x166	Munhall,Pa. U5
6 1/16	over 13x194 to 46x154	Munhall,Pa. U5
7	over 15x236 to 46x143	Munhall,Pa. U5
7 1/16	over 15x220 to 46x132	Munhall,Pa. U5
8	over 17x205 to 46x125	Munhall,Pa. U5
8 1/16	over 17x192 to 46x117	Munhall,Pa. U5
9	over 19x180 to 46x111	Munhall,Pa. U5
9 1/16	over 21x161 to 46x105	Munhall,Pa. U5
10	over 21x153 to 46x100	Munhall,Pa. U5
10 1/16	over 23x145 to 46x95	Munhall,Pa. U5
11	over 23x139 to 46x91	Munhall,Pa. U5
11 1/16	over 25x138 to 46x87	Munhall,Pa. U5
12	over 25x132 to 46x83	Munhall,Pa. U5
12 1/16	over 25x127 to 46x80	Munhall,Pa. U5
13	over 27x122 to 46x77	Munhall,Pa. U5
13 1/16	over 27x117 to 46x74	Munhall,Pa. U5
14	over 29x108 to 46x71	Munhall,Pa. U5
14 1/16	over 29x104 to 46x69	Munhall,Pa. U5
15	over 31x94 to 46x66	Munhall,Pa. U5
Check with mill for sizes		Fontana,Calif. K1

Universal (high-strength)

Thickness (inches)	Max. Widths Max. Lengths or Size Range (inches)	Mill Point, Producer
7/16–9	20-40x60-240	Midland,Pa. C18
.230	over 6x1080 to 7x1080	Clairton,Pa. U5
.230	6½x480 to 13x480	Aliquippa,Pa. J5
.230	8½x1080 to 24x960	So.Chicago,Ill. U5
⅛	over 6x1080 to 10x1080	Clairton,Pa. U5
⅛	6¼x960 to 36x720	Johnstown,Pa. B2
⅛	6½x480 to 13x480	Aliquippa,Pa. J5
⅛	7x960 to 20x720	Seattle B3
⅛	8½x1320 to 30x960	So.Chicago,Ill. U5
⅛	10x480 to 30x480	SparrowsPt.,Md. B2
⅛	10x865 to 38x720	Fairfield,Ala. T2
⅛	10x1080 to 36x600	Munhall,Pa. U5
⅛–⅝	7x72 to 16x252	Fontana,Calif. K1
⅛–.	624 over 6–20x480	IndianaHarbor,Ind. I-2
⅛–1⅛	22x372	Sharon,Pa. S3
5/16	over 6x1080 to 10x1080	Clairton,Pa. U5
5/16	6¼x960 to 36x960	Johnstown,Pa. B2
5/16	6½x780 to 15x780	Aliquippa,Pa. J5
5/16	7x960 to 20x720	Seattle B3
5/16	8½x1320 to 30x1080	So.Chicago,Ill. U5
5/16	10x480 to 30x480	SparrowsPt.,Md. B2
5/16	10x865 to 42x600	Fairfield,Ala. T2
5/16	10x1080 to 45x600	Munhall,Pa. U5
⅜	over 6x1080 to 10x1080	Clairton,Pa. U5
⅜	6¼x960 to 36x960	Johnstown,Pa. B2
⅜	6½x780 to 15x780	Aliquippa,Pa. J5
⅜	7x1140 to 22x1008	Seattle B3
⅜	8½x1320 to 30x1200	So.Chicago,Ill. U5
⅜	10x865 to 42x865	Fairfield,Ala. T2
⅜	10x1200 to 45x900	Munhall,Pa. U5
⅜	10x1440 to 60x480	SparrowsPt.,Md. B2
7/16	over 6x1080 to 10x984	Clairton,Pa. U5
7/16	6¼x960 to 36x960	Johnstown,Pa. B2
7/16	6½x780 to 15x780	Aliquippa,Pa. J5
7/16	7x1140 to 22x864	Seattle B3
7/16	8½x1320 to 30x1320	So.Chicago,Ill. U5
7/16	10x865 to 42x865	Fairfield,Ala. T2
7/16	10x1200 to 48x840	Munhall,Pa. U5
7/16	10x1440 to 60x480	SparrowsPt.,Md. B2
½	over 6x1080 to 10x912	Clairton,Pa. U5
½	6¼x960 to 36x960	Johnstown,Pa. B2
½	6½x780 to 15x780	Aliquippa,Pa. J5
½	7x1140 to 22x768	Seattle B3
½	8½x1320 to 30x1320	So.Chicago,Ill. U5
½	10x865 to 43x865	Fairfield,Ala. T2
½	10x1200 to 48x1080	Munhall,Pa. U5
½	10x1440 to 60x480	SparrowsPt.,Md. B2
½–1⅛	7x120 to 16x360	Fontana,Calif. K1
9/16	over 6x1080 to 10x804	Clairton,Pa. U5
9/16	6¼x960 to 36x960	Johnstown,Pa. B2
9/16	6½x780 to 15x780	Aliquippa,Pa. J5
9/16	7x1140 to 22x684	Seattle B3
9/16	8½x1320 to 30x1320	So.Chicago,Ill. U5
9/16	10x865 to 43x865	Fairfield,Ala. T2
9/16	10x1200 to 48x1200	Munhall,Pa. U5
9/16	10x1440 to 60x480	SparrowsPt.,Md. B2
5/8	over 6x1080 to 10x720	Clairton,Pa. U5
5/8	6¼x960 to 36x960	Johnstown,Pa. B2
5/8	6½x780 to 15x780	Aliquippa,Pa. J5
5/8	7x1140 to 22x612	Seattle B3
5/8	8½x1320 to 30x1320	So.Chicago,Ill. U5
5/8	10x865 to 43x865	Fairfield,Ala. T2
5/8	10x1200 to 48x1200	Munhall,Pa. U5
5/8	10x1440 to 60x480	SparrowsPt.,Md. B2
5/8–2½	over 6x480 to 24x168	Ind.Hrbr,Ind. I-2
11/16	6½x780 to 15x780	Aliquippa,Pa. J5
11/16	8½x1320 to 30x1320	So.Chicago,Ill. U5
11/16	10x865 to 43x865	Fairfield,Ala. T2
11/16	over 6x924 to 10x684	Clairton,Pa. U5
11/16	6¼x960 to 36x960	Johnstown,Pa. B2
11/16	6½x780 to 15x780	Aliquippa,Pa. J5
11/16	7x1140 to 22x504	Seattle B3
11/16	8½x1320 to 30x1320	So.Chicago,Ill. U5
11/16	10x865 to 43x865	Fairfield,Ala. T2
¾	10x1200 to 48x1200	Munhall,Pa. U5
¾	10x1440 to 60x480	SparrowsPt.,Md. B2
13/16	over 6x1200 to 30x1320	So.Chicago U5
13/16	6½x780 to 15x780	Aliquippa,Pa. J5
13/16	10x865 to 43x865	Fairfield,Ala. T2
13/16	over 6x1200 to 30x1260	So.Chicago U5
13/16	6½x780 to 15x780	Aliquippa,Pa. J5
1	over 6x768 to 10x504	Clairton,Pa. U5
1	over 6x1200 to 30x1182	So.Chicago U5
1	6¼x720 to 36x732	Johnstown,Pa. B2
1	6½x780 to 15x780	Aliquippa,Pa. J5
1	7x924 to 22x372	Seattle B3
1	10x865 to 43x865	Fairfield,Ala. T2
1	10x1104 to 60x480	SparrowsPt.,Md. B2
1	10x1200 to 48x936	Munhall,Pa. U5
1 1/16	over 6x708 to 10x528	Clairton,Pa. U5
1 1/16	over 6x1080 to 30x1032	So.Chicago U5
1 1/16	6¼x660 to 36x660	Johnstown,Pa. B2
1 1/16	6½x780 to 15x780	Aliquippa,Pa. J5
1 1/16	7x804 to 22x324	Seattle B3
1 1/16	10x865 to 43x865	Fairfield,Ala. T2
1 1/16	10x984 to 60x480	SparrowsPt.,Md. B2
1 1/16	10x1200 to 48x828	Munhall,Pa. U5
1 1/8	over 6x636 to 10x480	Clairton,Pa. U5
1 1/8	over 6x972 to 30x936	So.Chicago,Ill. U5
1 1/8	6¼x576 to 36x576	Johnstown,Pa. B2
1 1/8	6½x780 to 15x600	Aliquippa,Pa. J5
1 1/8	7x732 to 22x300	Seattle B3
1 1/8	10x900 to 60x480	SparrowsPt.,Md. B2

PLATES

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Universal (high-strength)

Thickness (inches)	Max. Widths Max. Lengths or Size Range (inches)	Mill Point, Producer
1 ¼	10x1200 to 48x744	Munhall, Pa. U5
1 $\frac{1}{16}$	over 6x612 to 10x456	Clairton, Pa. U5
1 ⅜	over 6x576 to 10x432	Clairton, Pa. U5
1 ⅜	over 6x888 to 30x846	So. Chicago, Ill. U5
1 ⅜	6 ⅛ x528 to 36x528	Johnstown, Pa. B2
1 ⅜	6 ½ x780 to 15x480	Aliquippa, Pa. J5
1 ⅜	7x672 to 22x264	Seattle B3
1 ⅜	10x816 to 60x480	SparrowsPt., Md. B2
1 ⅜	10x1200 to 47x720	Munhall, Pa. U5
1 ½	over 6x528 to 10x396	Clairton, Pa. U5
1 ½	over 6x804 to 30x792	So. Chicago, Ill. U5
1 ½	6 ⅛ x480 to 36x480	Johnstown, Pa. B2
1 ½	6 ½ x780 to 15x480	Aliquippa, Pa. J5
1 ½	7x612 to 22x240	Seattle B3
1 ½	10x744 to 60x480	SparrowsPt., Md. B2
1 ½	10x1195 to 47x624	Munhall, Pa. U5
1 ⅝	over 6x492 to 10x360	Clairton, Pa. U5
1 ⅝	over 6x744 to 30x714	So. Chicago, Ill. U5
1 ⅝	6 ⅛ x444 to 36x444	Johnstown, Pa. B2
1 ⅝	7x564 to 8x492	Seattle B3
1 ⅝	10x672 to 58x1200	SparrowsPt., Md. B2
1 ⅝	10x1103 to 47x240	Munhall, Pa. U5
1 ¾	over 6x456 to 10x336	Clairton, Pa. U5
1 ¾	over 6x684 to 30x660	So. Chicago, Ill. U5
1 ¾	6 ⅛ x408 to 36x408	Johnstown, Pa. B2
1 ¾	7x528 to 8x456	Seattle B3
1 ¾	10x624 to 58x1140	SparrowsPt., Md. B2
1 ⅞	10x1025 to 47x240	Munhall, Pa. U5
1 ⅞	over 6x420 to 10x312	Clairton, Pa. U5
1 ⅞	over 6x636 to 30x624	So. Chicago, Ill. U5
1 ⅞	6 ⅛ x384 to 36x384	Johnstown, Pa. B2
1 ⅞	7x492 to 8x432	Seattle B3
1 ⅞	10x600 to 58x1080	SparrowsPt., Md. B2
1 ⅞	10x956 to 47x240	Munhall, Pa. U5
2	over 6x396 to 10x288	Clairton, Pa. U5
2	over 6x600 to 30x576	So. Chicago, Ill. U5
2	6 ⅛ x372 to 36x372	Johnstown, Pa. B2
2	7x456 to 8x408	Seattle B3
2	10x552 to 58x960	SparrowsPt., Md. B2
2	10x897 to 47x240	Munhall, Pa. U5
2 ⅛	over 6x372 to 10x276	Clairton, Pa. U5
2 ⅛	over 6x348 to 10x264	Clairton, Pa. U5
2 ⅛	over 6x528 to 30x510	So. Chicago, Ill. U5
2 ⅛	10x765 to 58x810	SparrowsPt., Md. B2
2 ¼	over 6x336 to 10x240	Clairton, Pa. U5
2 ⅜	over 6x348 to 10x240	Clairton, Pa. U5
2 ½	over 6x336 to 10x228	Clairton, Pa. U5
2 ½	over 6x468 to 30x456	So. Chicago, Ill. U5
2 ½	10x690 to 58x730	SparrowsPt., Md. B2
2 ⅝	over 6x324 to 8x252	Clairton, Pa. U5
2 ¾	over 6x300 to 8x240	Clairton, Pa. U5
2 ¾	over 6x420 to 30x414	So. Chicago, Ill. U5
2 ¾	10x625 to 58x665	SparrowsPt., Md. B2
2 ⅞	over 6x288 to 8x228	Clairton, Pa. U5
3	over 6x276 to 8x216	Clairton, Pa. U5
3	7 ½ x438 to 30x378	So. Chicago, Ill. U5
3	10x575 to 58x610	SparrowsPt., Md. B2
3 ½	7 ½ x372 to 30x324	So. Chicago, Ill. U5
3 ½	10x490 to 58x520	SparrowsPt., Md. B2
4	7 ½ x324 to 30x282	So. Chicago, Ill. U5
4	10x430 to 58x455	SparrowsPt., Md. B2
4 ½	10x380 to 58x405	SparrowsPt., Md. B2
5	10x345 to 58x365	SparrowsPt., Md. B2
5 ½	10x315 to 58x330	SparrowsPt., Md. B2
6	10x290 to 58x305	SparrowsPt., Md. B2
6 ½	10x265 to 58x280	SparrowsPt., Md. B2
7	10x245 to 58x260	SparrowsPt., Md. B2
7 ½	10x230 to 58x245	SparrowsPt., Md. B2
8	10x215 to 58x230	SparrowsPt., Md. B2
8 ½	10x200 to 58x215	SparrowsPt., Md. B2
9	10x190 to 58x205	SparrowsPt., Md. B2
9 ½	12x300 to 58x190	SparrowsPt., Md. B2
10	12x290 to 58x180	SparrowsPt., Md. B2
10 ½	12x275 to 58x175	SparrowsPt., Md. B2
11	12x260 to 58x165	SparrowsPt., Md. B2
11 ½	24x250 to 58x160	SparrowsPt., Md. B2
12	24x240 to 58x150	SparrowsPt., Md. B2
12 ½	24x230 to 58x145	SparrowsPt., Md. B2

Strip Mill (carbon)

Thickness (inches)	Max. Widths Max. Lengths or Size Range (inches)	Mill Point, Producer
.180	49x480 to 72x480	Lackawanna, N.Y. B2
.180-.2299	over 48x72 to 54x192	Steubenvl., O. W10
.180-.2299	48 $\frac{1}{16}$-72x432	Cleveland J5
.180-.2299	48 $\frac{1}{16}$-90x480	Pittsburgh J5
.180-¼	over 48-72x240	Ashland, Ky. A10
.180-½	Check with mill for sizes	Ecorse, Mich. G5
$\frac{1}{16}$	48-60x360	GraniteCity, Ill. G4
$\frac{1}{16}$	over 48-50x324	IndianaHarbor, Ind. Y1
$\frac{1}{16}$	49x480 to 72x480	Lackawanna, N.Y. B2
$\frac{1}{16}$	72x300	Youngstown Y1
$\frac{1}{16}$-2	over 6-60x480	LoneStar, Tex. L5
.230	over 6-8 x up to 360	Youngstown U5
.230	10-15 x up to 240	Youngstown U5
.230	over 15-38 x up to 360	Youngstown U5
.230	36x480 to 72x480	Lackawanna, N.Y. B2
.230-¼	over 7-48x200-240	Ashland, Ky. A10
.230-¼	24x72 to 54x192	Steubenville, O. W10
.230-.2509	6x24 to 21 ⅛ x300	Weirton, W.Va. W6
.230-.30	17 ½ x120	Detroit M1
.230-$\frac{1}{16}$	48x168	Newport, Ky. N9
.230-⅝	42x240	Trenton, Mich. M1
.230-½	6-22x43-370	Riverdale, Ill. A1
.230-½	7-26 x up to 477	Conshohocken, Pa. A3
.230-⅝	22-90x480	Pittsburgh J5
.230-¾	over 6-42 x up to 144	Mansfield, O. E6
.230-¾	22-72x432	Cleveland J5
⅛	over 6x150 to 50x324	Ind. Harbor, Ind. Y1
⅛	24-60x360	GraniteCity, Ill. G4
⅛	36x480 to 72x480	Lackawanna, N.Y. B2
⅛	72x480	Youngstown Y1
⅛-⅝	over 6-8 x up to 480	Youngstown U5
⅛-⅜	10-38 x up to 360	Youngstown U5
.251-$\frac{1}{16}$	over 7-72x144-240	Ashland, Ky. A10
.251-.3759	6x24 to 20 ⅛ x300	Weirton, W.Va. W6
$\frac{1}{16}$	over 6x150 to 50x324	Ind. Harb., Ind. Y1
$\frac{1}{16}$	36x480 to 72x480	Lackawanna, N.Y. B2
$\frac{1}{16}$	72x456 to 30x480	Youngstown Y1
.3126-⅜	10-72 x up to 240	Ashland, Ky. A10
⅜	over 6x150 to 50x324	Ind. Harb., Ind. Y1
⅜	36x480 to 72x480	Lackawanna, N.Y. B2
⅜	72x480 to 52x480	Youngstown Y1
over ⅜-½	10-24 x up to 360	Youngstown U5
.376-.4379	6x24 to 19 ⅛ x300	Weirton, W.Va. W6
$\frac{7}{16}$	36x480 to 72x480	Lackawanna, N.Y. B2
$\frac{7}{16}$-½	6x24 to 18 ⅛ x300	Weirton, W.Va. W6
½	36x480 to 72x480	Lackawanna, N.Y. B2
½	72x480 to 38x408	Youngstown Y1
$\frac{9}{16}$	36x480 to 72x480	Lackawanna, N.Y. B2
⅝	36x480 to 72x480	Lackawanna, N.Y. B2
⅝	72x444 to 38x336	Youngstown Y1
⅝-⅞	22-90x360	Pittsburgh J5
¾	36x480 to 72x396	Lackawanna, N.Y. B2
¾	72x372 to 52x480	Youngstown Y1
⅞	36x480 to 72x336	Lackawanna, N.Y. B2
⅞	72x312 to 36x480	Youngstown Y1
1	36x444 to 72x300	Lackawanna, N.Y. B2
1	72x276 to 30x432	Youngstown Y1

Abrasion Resistant

Bessemer, Ala. T2
Clairton, Pa. U5
Fairfield, Ala. T2
Fontana, Calif. K1
Gary, Ind. U5
Geneva, Utah C11
Johnstown, Pa. B2
Munhall, Pa. U5
Seattle B3
SouthChicago, Ill. U5
SparrowsPoint, Md. B2
Youngstown Y1

Commercially Pure Iron

Ashland, Ky. A10
Brockton, Mass. S32
Cleveland R2
Newport, Ky. N9

Corrugated Culvert (copper iron)

Canton, O. R2

Floor Plate

Cleveland J5
Conshohocken, Pa. A3
IndianaHarbor, Ind. I-2
Munhall, Pa. U5
SouthChicago, Ill. U5

Wrought Iron

Economy, Pa. B14

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Flats, Square Edge, Hot-Rolled (Carbon)

Sizes (inches)	Mill Point, Producer
.049–.058 x ½–1½	Tacony,Phila. D4
.049–.058 x 1⅛–2	Tacony,Phila. D4
.065–.083 x ⅞–1½	Tacony,Phila. D4
.065–.238 x 1⅞–3½	Tacony,Phila. D4
.095–.165 x ¼–1½	Tacony,Phila. D4
.095 x 3 1/16–6	Tacony,Phila. D4
7/64 x 3 1/16–8	Tacony,Phila. D4
9/64–7/32 x ⅝†	ChicagoHts.,Ill. C2
9/64–7/32 x ⅝†	Franklin,Pa. F5
9/64–⅜ x ⅝–⅞†	ChicagoHts.,Ill. C2
9/64–⅜ x ⅝–⅞†	Franklin,Pa. F5
9/64–⅜ x 1–1⅛†	ChicagoHts.,Ill. C2
9/64–⅜ x 1–1⅛†	Franklin,Pa. F5
9/64–⅜ x 1¼†	ChicagoHts.,Ill. C2
9/64–⅜ x 1¼†	Franklin,Pa. F5
9/64–¾ x 1⅜–1½†	ChicagoHts.,Ill. C2
9/64–¾ x 1⅜–1½†	Franklin,Pa. F5
.120 x 3 1/16–13	Tacony,Phila. D4
⅛ x ½–4	Atlanta A11
⅛–½ x ⅝	Knoxville,Tenn. K6
⅛–½ x ⅞†	Tonawanda,N.Y. B12
⅛–⅝ x ⅞	Knoxville,Tenn. K6
⅛–⅝ x 1–1⅜†	Tonawanda,N.Y. B12
⅛–¾ x ⅞	Knoxville,Tenn. K6
⅛–⅞ x 1–1⅛	Knoxville,Tenn. K6
⅛–1 x 1⅛–1⅜	Knoxville,Tenn. K6
⅛–1 x 1⅜–2†	ChicagoHts.,Ill. C2
⅛–1 x 1⅜–2†	Franklin,Pa. F5
⅛–1¼ x 1½–1⅜	Knoxville,Tenn. K6
⅛–1⅜ x 2–2¼	Knoxville,Tenn. K6
⅛–2 x ½–3	SouthChicago,Ill. W14
⅛–2 x 2½–3	Knoxville,Tenn. K6
.134–.180 x 3 1/16–16	Tacony,Phila. D4
.180–.238 x 1 1/16–1½	Tacony,Phila. D4
7/32 x ½–4	Atlanta A11
7/32 x ⅝–1½	N.Tonawanda,N.Y. B11
7/32–1/2 x ¾–4½	Struthers,O. Y1
7/32–¼ x ¾†	Tonawanda,N.Y. B12
7/32–¼ x 1–1⅜	Midland,Pa. C18
7/32–⅜ x 3½†	Tonawanda,N.Y. B12
7/32–⅜ x 3–3¼†	Tonawanda,N.Y. B12
7/32–½ x 1⅜–4	Huntington,W.Va. W7
7/32–½ x 2–2⅜†	Tonawanda,N.Y. B12
7/32–⅝ x 1½–1⅜†	Tonawanda,N.Y. B12
7/32–¾ x 1¼–2	Huntington,W.Va. W7
7/32–2 x 1–6	Richmond,Va. T10
7/32–2 x 3¼–5	Knoxville,Tenn. K6
1/4–5/16 x 3 5/16–4⅛	Buffalo R2
1/4–5/16 x 1–4½	IndianaHarbor,Ind. I-2
1/4–5/16 x ¾–4⅛	Buffalo R2
1/4–5/16 x 2–3	Gary,Ind. U5
1/4–5/16 x 2–3	Youngstown U5
1/4–5/16 x 3 1/16–4½	Gary,Ind. U5
1/4–5/16 x 3 1/16–4½	Youngstown U5
1/4–11/32 x ½–1 1/32	Johnstown,Pa. B2
1/4–11/32 x 1 1/16–1 1/16	Pittsburgh J5
1/4–11/32 under ½ x ⅝–1 3/32	Williamsport,Pa. S19
1/4–11/32 ½–1 1/32 x 1½–2	Johnstown,Pa. B2
1/4–11/32 ½ x 1½–2½	Pittsburgh J5
1/4–11/32 ½–2½ x 2½–6	Weirton,W.Va. W6
1/4–11/32 ⅝–⅞ x ⅝–⅞	Johnstown,Pa. B2
1/4–11/32 ⅝ x 1 1/16–1 1/32	Johnstown,Pa. B2
1/4–11/32 ⅝–⅞ x ¾–⅞	Johnstown,Pa. B2
1/4–11/32 ⅝–⅞ x 1 1/16–1 1/32	Johnstown,Pa. B2
1/4–11/32 under 1 1/16 x 3 5/16–4	Williamsport,Pa. S19
1/4–11/32 1 1/16–1 1/32 x ⅞–1	Johnstown,Pa. B2
1/4–11/32 ⅞–1 x 3–16	Tacony,Phila. D4
1/4–11/32 1–1 1/32 x 1–1 1/32	Johnstown,Pa. B2
1/4–11/32 1 x ⅞–2½	Williamsport,Pa. S19
1/4–11/32 1–1 1/32 x 1½–1 7/32	Johnstown,Pa. B2
1/4–11/32 1–1 1/32 x 1 1/16–1 1/32	Johnstown,Pa. B2
1/4–11/32 1–1 1/32 x 1 1/16–1 1/32	Johnstown,Pa. B2
1/4–11/32 1–1 1/32 x 1 1/16–1 1/32	Lackawanna,N.Y. B2
1/4–11/32 1–1 1/32 x 1 1/16–1 1/32	Johnstown,Pa. B2
1/4–11/32 1–1 1/32 x 1 1/16–1 1/32	Lackawanna,N.Y. B2
1/4–11/32 1–1 1/32 x 1 1/16–1 1/32	Johnstown,Pa. B2
1/4–11/32 1–1 1/32 x 1 1/16–1 1/32	Lackawanna,N.Y. B2
1/4–11/32 1–1 1/32 x 1 1/16–1 1/32	Johnstown,Pa. B2
1/4–11/32 1–1 1/32 x 1 1/16–1 1/32	Gary,Ind. U5
1/4–11/32 1–1 1/32 x 2–2 1/16	Johnstown,Pa. B2
1/4–11/32 1–1 1/32 x 2–2 1/16	Lackawanna,N.Y. B2
1/4–11/32 2 x 2½–2 1/32	Johnstown,Pa. B2
1/4–11/32 2–2½ x 2½–2 1/32	Lackawanna,N.Y. B2
1/4–11/32 2½ x 2¾–4	Lackawanna,N.Y. B2
11/32 x ⅝–1½	N.Tonawanda,N.Y. B11
11/32 x 1 1/16	Pittsburg,Calif. C11
11/32–⅜ x 1–1 1/32	Lackawanna,N.Y. B2
11/32–7/16 x 2 5/16–2 1/32	Johnstown,Pa. B2
11/32–7/16 x 2 5/16–2 1/32	Johnstown,Pa. B2
11/32–7/16 x 2 5/16–2 1/32	Johnstown,Pa. B2
11/32–7/16 x 2 5/16–2 1/32	Johnstown,Pa. B2
11/32–7/16 x 3–3 1/32	Johnstown,Pa. B2
11/32–3 x 4–6	Johnstown,Pa. B2
⅜ x ½–6	Alton,Ill. L1
⅜ x ½–6	Atlanta A11
⅜ x ⅝–2	JerseyCity,N.J. A17
⅜ x ¾	Pittsburg,Calif. C11
⅜ x ¾–6	Houston S5
⅜ x ¾–6	IndianaHarbor,Ind. I-2
⅜ x 1–1⅝	Portland,Oreg. O4
⅜ x 1–4½	Niles,Calif. P1
⅜ x 1 1/16–6	Cleveland R2
⅜ x 1⅛–2	Minnequa,Colo. C10
⅜–7/16 x ½	S.SanFrancisco B3
⅜–7/16 x ½	Minnequa,Colo. C10
⅜–7/16 x ⅝	S.SanFrancisco B3
⅜–7/16 x ¾	Gadsden,Ala. R2
⅜–7/16 x ⅞	Gadsden,Ala. R2
⅜–7/16 x 1	Fairfield,Ala. T2
⅜–⅝ x 1–2	Milton,Pa. M18
⅜–⅝ x 1⅛	Fairfield,Ala. T2
⅜–⅝ x 1⅛	Pittsburg,Calif. C11
⅜–⅝ x 1⅛	Torrance,Calif. C11
⅜–⅝ x 1⅜	SouthChicago,Ill. R2
⅜–⅝ x 1½	Fairfield,Ala. T2
⅜–⅝ x 3 23/64–3 1/8	Youngstown U5
⅜–7/8 x ½–2	N.Tonawanda,N.Y. B11
⅜–½ x ⅝	Minnequa,Colo. C10
⅜–½ x ⅝	S.SanFrancisco B3
⅜–½ x ¾–⅞	KansasCity,Mo. S5
⅜–½ x 1	Pittsburg,Calif. C11
⅜–½ x 1	SouthChicago,Ill. R2
⅜–½ x 1	Torrance,Calif. C11
⅜–½ x 1–2½	Tonawanda,N.Y. B12
⅜–½ x 1–4	Birmingham C15
⅜–½ x 1¼	Minnequa,Colo. C10
⅜–½ x 1⅛	SouthChicago,Ill. R2
⅜–½ x 1⅛	KansasCity,Mo. S5
⅜–½ x 1⅜–1½	Minnequa,Colo. C10
⅜–½ x 1⅝	Portland,Oreg. O4
⅜–½ x 3¼	Seattle B3
⅜–½ x 3½	Pittsburg,Calif. C11
⅜–½ x 4	Pittsburg,Calif. C11
⅜–23/32 x ⅝–6	Struthers,O. Y1
⅜–7/16 x ⅞	Seattle B3
⅜–7/16 x ⅞	S.SanFrancisco B3
⅜–7/16 x 1	S.SanFrancisco B3
⅜–7/16 x 1⅛	S.SanFrancisco B3
⅜–½ x 2½	Pittsburg,Calif. C11
⅜–½ x ⅝	Minnequa,Colo. C10
⅜–⅝ x ⅝–⅞	Bessemer,Ala. T2
⅜–⅝ x 1½–6	Aliquippa,Pa. J5
⅜–⅝ x 1⅝	Fairfield,Ala. T2
⅜–⅝ x 2	Fairfield,Ala. T2
⅜–⅝ x 4½	KansasCity,Mo. S5
⅜–⅝ x ⅞–4	Corry,Pa. M14
⅜–⅝ x ⅞–6	Buffalo R2
⅜–⅝ x ⅞–1	Minnequa,Colo. C10
⅜–⅝ x 1	KansasCity,Mo. S5
⅜–⅝ x 1	Seattle B3
⅜–⅝ x 1–3	Gadsden,Ala. R2
⅜–⅝ x 1–4	Fairless,Pa. U5
⅜–⅝ x 1¼	Minnequa,Colo. C10
⅜–⅝ x 1½	KansasCity,Mo. S5
⅜–⅝ x 1½	Pittsburg,Calif. C11
⅜–⅝ x 1½	Torrance,Calif. C11
⅜–⅝ x 1½–6½	Midland,Pa. C18
⅜–⅝ x 1⅝	Portland,Oreg. O4
⅜–⅝ x 1⅝	Torrance,Calif. C11
⅜–⅝ x 2	Pittsburg,Calif. C11
⅜–⅝ x 3	Pittsburg,Calif. C11
⅜–⅝ x 3¼	Portland,Oreg. O4
⅜–⅝ x 5–6	KansasCity,Mo. S5
⅜–⅞ x 1–6	IndianaHarbor,Ind. Y1
⅜–1 x ⅝–4	Joliet,Ill. P22
⅜–1 x 1–6	Sterling,Ill. N15
⅜–1 x 1¼	Seattle B3
⅜–1 x 1¼	SouthChicago,Ill. R2
⅜–1 x 1½	Portland,Oreg. O4
⅜–1 x 1½	Seattle B3
⅜–1 x 1½	SouthChicago,Ill. R2
⅜–1 x 1⅝	S.SanFrancisco B3
⅜–1 x 1⅝	LosAngeles B3
⅜–1 x 1⅝	SouthChicago,Ill. R2
⅜–1 x 1⅝	S.SanFrancisco B3
⅜–1 x 1⅝–4	KansasCity,Mo. S5
⅜–1 x 2	Portland,Oreg. O4
⅜–1 x 2	S.SanFrancisco B3
⅜–1 x 2	Torrance,Calif. C11
⅜–1 x 2–2½	Fontana,Calif. K1
⅜–1 x 2¼	Portland,Oreg. O4
⅜–1 x 2¼	S.SanFrancisco B3
⅜–1 x 2¼	Torrance,Calif. C11
⅜–1 x 2¼–4	Minnequa,Colo. C10
⅜–1 x 2½	Portland,Oreg. O4
⅜–1 x 2½	S.SanFrancisco B3
⅜–1 x 2½	Torrance,Calif. C11
⅜–1 x 2¾	LosAngeles B3
⅜–1 x 2¾	Portland,Oreg. O4
⅜–1 x 2¾	S.SanFrancisco B3
⅜–1 x 3	LosAngeles B3
⅜–1 x 3	Portland,Oreg. O4
⅜–1 x 3	Torrance,Calif. C11
⅜–1 x 3¼	S.SanFrancisco B3
⅜–1 x 3½	Gadsden,Ala. R2
⅜–1 x 3½	LosAngeles B3
⅜–1 x 3½	Portland,Oreg. O4
⅜–1 x 3½	Torrance,Calif. C11
⅜–1 x 3½	Youngstown U5
⅜–1 x 4	Gadsden,Ala. R2
⅜–1 x 4	LosAngeles B3
⅜–1 x 4	Portland,Oreg. O4
⅜–1 x 4	Torrance,Calif. C11
⅜–1 x 4	LosAngeles B3
⅜–1 x 4½	Portland,Oreg. O4
⅜–1 x 4½	Gadsden,Ala. R2
⅜–1 x 5	LosAngeles B3
⅜–1 x 5	Portland,Oreg. O4
⅜–1 x 5½	Portland,Oreg. O4
⅜–1 x 6	Gadsden,Ala. R2
⅜–1 x 6	LosAngeles B3
⅜–1 x 6	Portland,Oreg. O4
⅜–1⅛ x 5¼–5½	Bessemer,Ala. T2
⅜–1½ x 1⅝	Seattle B3
⅜–1½ x 2	LosAngeles B3
⅜–1½ x 2	Seattle B3
⅜–1½ x 2¼	LosAngeles B3
⅜–1½ x 2¼	Seattle B3
⅜–1½ x 2½	LosAngeles B3
⅜–1½ x 2½	Seattle B3
⅜–1½ x 2⅝	Seattle B3
⅜–1½ x 3	S.SanFrancisco B3
⅜–1½ x 3–6	Fontana,Calif. K1
⅜–1½ x 3½	S.SanFrancisco B3
⅜–1½ x 4	S.SanFrancisco B3
⅜–1½ x 4½	S.SanFrancisco B3
⅜–1½ x 5	S.SanFrancisco B3
⅜–1½ x 6	S.SanFrancisco B3
⅜–1 61/64 x ⅝–1 23/64	Youngstown U5
⅜–1⅝ x 2¼	Bessemer,Ala. T2
⅜–2 x 2½–3½	Bessemer,Ala. T2
⅜–2 x 3	Seattle B3
⅜–2 x 3½	Seattle B3
⅜–2 x 4	Seattle B3
⅜–2 x 4–5	Bessemer,Ala. T2
⅜–2 x 4½	Seattle B3
⅜–2 x 5	Seattle B3
⅜–2 x 5½–6	Minnequa,Colo. C10
⅜–2 x 6	Bessemer,Ala. T2
⅜–2 x 6	Seattle B3
⅜–2½ x 3 7/16–8	SouthChicago,Ill. W14
⅜–2½ x 4½	Minnequa,Colo. C10
⅜–2⅝ x 4 3/16–6	Lackawanna,N.Y. B2
⅜–3 x 3½	Gary,Ind. U5
⅜–3 x 3 23/64–3 1/8	Gary,Ind. U5
⅜–3 x 4–6	Economy,Pa. B14
⅜–3 x 5	Minnequa,Colo. C10
⅜–3 7/16 x 3½–6	Clairton,Pa. U5
⅜–3 7/16 x 3 9/64–6	Gary,Ind. U5
over ¼–⅝ x 1–6	Alton,Ill. L1
.259–.30 x 1/4–1½	Tacony,Phila. D4
.259–.30 x 1⅝–3½	Tacony,Phila. D4
7/16 x 1 1/16–6	Cleveland R2
.30–½ x 6	Youngstown R2
7/16 x 23/64–1 7/32	Tacony,Phila. D4
7/16 x ⅝	Bessemer,Ala. T2
7/16 x ⅝–2	JerseyCity,N.J. A17
7/16 x ⅝–6	Atlanta A11
7/16 x 1–4½	Niles,Calif. P1
7/16 x 1–6	Cleveland R2
7/16–½ x 1–6	Houston S5
7/16–½ x 1 1/16–3½	Tacony,Phila. D4
7/16–½ x ⅝–6	IndianaHarbor,Ind. I-2
7/16–½ x ¾	Seattle B3
7/16–1 x 1⅝–2	Minnequa,Colo. C10
7/16–1 x 1⅝–6	Cleveland R2
15/32 x 1–6	Tacony,Phila. D4
½ x 23/64–1⅝	Corry,Pa. M14
½ x ½–6	Bessemer,Ala. T2
½ x 1 1/16	Atlanta A11
½ x ½–6	JerseyCity,N.J. A17
½ x 1–2	Niles,Calif. P1
½ x 1–4½	Fontana,Calif. K1
½–⅝ x 1½	Fontana,Calif. K1
½–⅝ x 1⅝	ChicagoHts.,Ill. C2
½–⅝ x 3†	Franklin,Pa. F5
½–⅝ x 3†	ChicagoHts.,Ill. C2
½–1 x 2½–2¾†	ChicagoHts.,Ill. C2
½–1 x 2½–2¾†	Youngstown U5
½–1 x 2 23/64–3	Youngstown U5
½–1 x 3 7/64–3 21/64	Bessemer,Ala. T2
½–1 x 3⅝	Torrance,Calif. C11
½–1 x 4½	Torrance,Calif. C11
½–1 x 5	Torrance,Calif. C11
½–1 x 6	Youngstown U5
½–1 7/64 x 2 7/64–2½	Youngstown U5
½–1⅛ x 2	Youngstown U5
½–1⅛ x 2	Gary,Ind. U5
½–1⅛ x 2–3 23/64	Duquesne,Pa. U5
½–2 x 1 1/16–6	SouthChicago,Ill. R2
½–2¼ x 2 7/64–2½	Gary,Ind. U5

† Rail steel.

BARS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Flats, Square Edge, Hot-Rolled (carbon)

Sizes (inches)	Mill Point, Producer
⅝–2½ x 2 23/64–3	Gary,Ind. U5
⅝–2 7/8 x 1 1/4–6	Cleveland R2
⅝–2 61/64 x 3 7/64–3 21/64	Gary,Ind. U5
⅝–3¼ x up to 6	Ecorse,Mich. G5
over ⅝–½ x 1⅝–6	Alton,Ill. L1
7/16 x 2 9/16–3 1/2	Tacony,Phila. D4
7/16 x ⅝–3¼	Atlanta A11
7/16 x 1–2	JerseyCity,N.J. A17
7/16 x 1–4½	Niles,Calif. P1
7/16–⅝ x 1 7/8–1½	Pittsburgh J5
7/16–¾ x 1 1/4–1½	Midland,Pa. C18
7/16–¾ x 1½–6	Houston S5
½ x 23/32–1 3/8	Tacony,Phila. D4
½ x ⅝–6	Cory,Pa. M14
½ x ⅝	Gadsden,Ala. R2
½ x ¾–6	Atlanta A11
½ x ⅞	Gadsden,Ala. R2
½ x 1	Fairfield,Ala. T2
½ x 1–2	JerseyCity,N.J. A17
½ x 1–4½	Niles,Calif. P1
½ x 1¼	Fairfield,Ala. T2
½–⅝ x 1½	Fairfield,Ala. T2
½–⅝ x ⅞	SouthChicago,Ill. R2
½–1 3/8 x ⅞–3½	Tacony,Phila. D4
½–1 3/8 x 31/32–1 11/32	Bessemer,Ala. T2
½–1 7/8 x over ½–2	N.Tonawanda,N.Y. B11
½–2½ x 3–4	Economy,Pa. B14
over ½–⅝ x 2–6	Alton,Ill. L1
9/16 x 31/32–1 1/8	Tacony,Phila. D4
9/16 x 1–3¼	Atlanta A11
9/16–⅝ x ¾–6	IndianaHarbor,Ind. I-2
9/16–¾ x 1–6	Struthers,O. Y1
9/16–1 x 1½	Minnequa,Colo. C10
5/8 x 1 7/16	Duquesne,Pa. U5
⅝ x 31/32–1 1/8	Tacony,Phila. D4
⅝ x 1–2	JerseyCity,N.J. A17
⅝ x 1–4½	Niles,Calif. P1
⅝ x 1–6	Atlanta A11
⅝–⅞ x ¾–10	Corry,Pa. M14
⅝–1 x 1½	LosAngeles B3
⅝–1½ x 1½–6	Aliquippa,Pa. J5
11/16 x 1 3/8–3 1/4	Atlanta A11
11/16–¾ x ⅞–6	IndianaHarbor,Ind. I-2
11/16–¾ x ⅞–6	Struthers,O. Y1
11/16–¾ x 1	Bessemer,Ala. T2
11/16–⅞ x 1⅛	Bessemer,Ala. T2
11/16–1⅛ x 1 11/16–1 7/8	Bessemer,Ala. T2
11/16–1¼ x 1½–1¾	Bessemer,Ala. T2
11/16–1⅜ x 1⅞	Bessemer,Ala. T2
11/16–1½ x 2	Bessemer,Ala. T2
¾ x1–4½	Niles,Calif. P1
¾ x 1⅝–6	Atlanta A11
¾–1 7/16 x 2¾–4	Warren,O. C17
¾–2 x 5½–6	Knoxville,Tenn. K6
25/32–29/32 x 1–6	Struthers,O. Y1
13/16 x 1 1/16–1⅜	Buffalo R2
13/16 x 1–6	IndianaHarbor,Ind. I-2
13/16–2 x 1½–6	Buffalo R2
27/32–⅞ x 1½–6	Struthers,O. Y1
⅞ x 11/16–3½	Tacony,Phila. D4
⅞ x 1–4½	Niles,Calif. P1
⅞ x 1¼–1⅝	Midland,Pa. C18
⅞ x 1½–6	Atlanta A11
⅞ x 2¼–5	Houston S5
⅞–1½ x 2	Gadsden,Ala. R2
⅞–1½ x 2½	Gadsden,Ala. R2
⅞–1½ x 3	Gadsden,Ala. R2
⅞–2¾ x 1⅞–5	Midland,Pa. C18
57/64–63/64 x 1 5/16–6	IndianaHarbor,Ind. Y1
57/64–1 7/64 x 1¼–6	Struthers,O. Y1
15/16 x 1–3½	Tacony,Phila. D4
15/16–1 x 1¼–6	IndianaHarbor,Ind. I-2
15/16–1¼ x 3–15	Tacony,Phila. D4
61/64 x 1 1/32	Bessemer,Ala. T2
1 x 1 1/16–3½	Tacony,Phila. D4
1 x 1¼–4½	Niles,Calif. P1
1 x 1½–6	Atlanta A11
1 x 2–6	Houston S5
1–1¼ x 1¼–10	Corry,Pa. M14
1–1 1/32 x 1⅝–6	IndianaHarbor,Ind. Y1
1–3 x 6–11	Midland,Pa. C18
1 1/16 x 1¼–3½	Tacony,Phila. D4
1 1/16–1½ x 2	Minnequa,Colo. C10
1 1/16–2 x 2¼–2⅞	Minnequa,Colo. C10
1 1/16–2 x 3⅛	Minnequa,Colo. C10
1 1/16–2½ x 3	Minnequa,Colo. C10
1 1/16–2½ x 3½	Minnequa,Colo. C10
1 1/16–3¼ x 4	Minnequa,Colo. C10
1 1/8 x 1 1/16–3⅝	Tacony,Phila. D4
1 1/8–1 11/64 x 1¼–6	Struthers,O. Y1
1 1/8–2 1/2 x 3¾	Minnequa,Colo. C10
1 3/16 x 1 13/16	Bessemer,Ala. T2
1 1/4 x 1 1/16–3⅝	Tacony,Phila. D4
1 1/4–1 11/32 x 1½–6	Struthers,O. Y1
1 1/4–1½ x over 1¼–1⅝	N.Tonawanda,N.Y. B11
1¼–1½ x 4–6	Houston S5
1 5/16 x 1⅜–3⅝	Tacony,Phila. D4
1 5/16 x 1 3/4	Bessemer,Ala. T2
1 5/16–1 11/32 x 1½–6	Struthers,O. Y1
1 5/16–1½ x 3–14	Tacony,Phila. D4
1 5/16–1 29/32 x 1⅝–6	IndianaHarbor,Ind. Y1
1⅜ x 1 7/16–3⅝	Tacony,Phila. D4
1⅜–1⅝ x 1½–10	Corry,Pa. M14
1 7/16 x 1½	Bessemer,Ala. T2
1 7/16 x 1½–3⅞	Tacony,Phila. D4
1 21/32 x 2⅛	Bessemer,Ala. T2
1½ x 1 7/16–4	Tacony,Phila. D4
1½–1 29/32 x 1⅝–6	Struthers,O. Y1
1½–1⅝ x 2–6	IndianaHarbor,Ind. I-2
1⅝ x 2 3/32	Bessemer,Ala. T2
1⅝–1 47/64 x 1¾–6	Struthers,O. Y1
1⅝–1 47/64 x 2–6	IndianaHarbor,Ind. Y1
1¾–1 55/64 x 1⅞–6	Struthers,O. Y1
1¾–1 55/64 x 2 7/16–6	IndianaHarbor,Ind. Y1
1 13/16–2¼ x 2 1/4–2½	Youngstown U5
1 13/16–2½ x 2 21/32–3	Youngstown U5
1 13/16–2 61/64 x 3 1/4–3 21/64	Youngstown U5
1⅞–2 x 2 5/16–6	IndianaHarbor,Ind. Y1
1⅞–3 x 2-12	Corry,Pa. M14
2 x 2¼–6	IndianaHarbor,Ind. I-2
2¼ x 2¼–6	IndianaHarbor,Ind. I-2
2¼ x 2⅝–6	IndianaHarbor,Ind. I-2
2⅜–2⅝ x 3–6	IndianaHarbor,Ind. I-2
2⅜–3 x 3⅛–6	IndianaHarbor,Ind. I-2
3⅛–5 x 3⅛–16	Corry,Pa. M14
3⅛ x 3½–6	IndianaHarbor,Ind. I-2
3½ x 3⅝–6	IndianaHarbor,Ind. I-2

†Rail steel.

Flats, Auto Leaf Spring, Hot-Rolled (carbon)

Ecorse,Mich. G5
Fontana,Calif. K1
IndianaHarbor,Ind. I-2
IndianaHarbor,Ind. Y1
LosAngeles B3
SouthChicago,Ill. W14

Flats, Nut, Hot-Rolled (carbon)

Aliquippa,Pa. J5
Bessemer,Ala. T2
Buffalo R2
Clairton,Pa. U5
Cleveland R2
Duquesne,Pa. U5
Fairless,Pa. U5
Gadsden,Ala. R2
Gary,Ind. U5
IndianaHarbor,Ind. I-2
IndianaHarbor,Ind. Y1
N.Tonawanda,N.Y. B11
Pittsburgh J5
SouthChicago,Ill. W14
Youngstown U5
Youngstown Y1

Flats, Draft Key, Hot-Rolled (carbon)

Bessemer,Ala. T2
Buffalo R2
Clairton,Pa. U5
Cleveland R2
Gadsden,Ala. R2
Gary,Ind. U5
IndianaHarbor,Ind. I-2
IndianaHarbor,Ind. Y1
SouthChicago,Ill. R2

Flats, Round Edge Concave, Hot-Rolled (carbon)

Buffalo R2
Clairton,Pa. U5
Fontana,Calif. K1
Gary,Ind. U5
IndianaHarbor,Ind. I-2
IndianaHarbor,Ind. Y1
SouthChicago,Ill. R2
Youngstown U5
Youngstown Y1

Flats, Round Edge Over-all (carbon)

Aliquippa,Pa. J5
Atlanta A11
Bessemer,Ala. T2
Buffalo R2
ChicagoHts.,Ill.† C2
ChicagoHts.,Ill.† I-2
Clairton,Pa. U5
Cleveland R2
Economy,Pa. B14
Franklin,Pa.† F5
Gadsden,Ala. R2
Gary,Ind. U5
IndianaHarbor,Ind. I-2
IndianaHarbor,Ind. Y1
JerseyCity,N.J. A17
Johnstown,Pa. B2
Knoxville,Tenn. K6
Lackawanna,N.Y. B2
LosAngeles B3
Midland,Pa. C18
Pittsburgh J5
St.Louis M11
St.Louis† M11
Seattle B3
SouthChicago,Ill. R2
SouthChicago,Ill. W14
Sterling,Ill. C23
Struthers,O. Y1
Tonawanda,N.Y.† B12
Weirton,W.Va. W6
Williamsport,Pa.† S19
Youngstown U5
Youngstown Y1

†Rail steel.

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Flats, Hot-Rolled (alloy)

Sizes (inches)	Mill Point, Producer
.049–.058 x ½–1½	Tacony, Phila. D4
.049–.058 x 1 1/16–2	Tacony, Phila. D4
.063–.083 x 7/16–1½	Tacony, Phila. D4
.065–.238 x 1 7/16–3½	Tacony, Phila. D4
.095 x 3 1/16–6	Tacony, Phila. D4
.095–.165 x ¼–1½	Tacony, Phila. D4
7/64 x 3 1/16–8	Tacony, Phila. D4
.120 x 3 1/16–13	Tacony, Phila. D4
.134–.180 x 3 1/16–16	Tacony, Phila. D4
.180–.238 x 1 1/64–1½	Tacony, Phila. D4
5/16–¼ x 1–1⅝	Midland, Pa. C18
11/32–7/32 x ⅜–3½	Buffalo R2
11/64–3/32 x 2–3	Gary, Ind. U5
11/64–3/32 x 2–3	Youngstown U5
11/64–3/32 x 3 1/64–4½	Gary, Ind. U5
11/64–3/32 x 3 1/64–4½	Youngstown U5
11/64–7/64 x ½–1 11/16	Johnstown, Pa. B2
11/64–7/64 x 1 11/16–1 13/16	Pittsburgh J5
11/64–½ x 5/16–⅝	Johnstown, Pa. B2
11/64–½ x 1½–2½	Pittsburgh J5
11/64–7/64 x ⅝–⅞	Johnstown, Pa. B2
11/64–⅝ x 11/16–⅞	Johnstown, Pa. B2
11/64–11/64 x ⅝–⅞	Johnstown, Pa. B2
11/64–11/64 x 2–3	Canton, O. R2
11/64–¾ x 11/16–⅞	Johnstown, Pa. B2
11/64–13/64 x ⅞–1	Johnstown, Pa. B2
11/64–⅞ x 3–16	Tacony, Phila. D4
11/64–11/16 x 1–1 1/32	Johnstown, Pa. B2
13/64–1 x 1 1/16–1 3/64	Johnstown, Pa. B2
13/64–1⅛ x 1 1/16–1 11/64	Johnstown, Pa. B2
13/64–1¼ x 1⅜–1 13/64	Johnstown, Pa. B2
13/64–1⅜ x 1½–1 15/64	Lackawanna, N.Y. B2
13/64–1⅜ x 1½–1 15/64	Johnstown, Pa. B2
13/64–1½ x 1½–1 15/64	Lackawanna, N.Y. B2
13/64–1½ x 1¾–1 15/64	Johnstown, Pa. B2
13/64–1⅝ x 1¾–1 15/64	Lackawanna, N.Y. B2
13/64–1⅝ x 1⅞–1 21/64	Johnstown, Pa. B2
13/64–1 7/64 x ½–1 15/64	Gary, Ind. U5
13/64–1¾ x 2–2 13/64	Johnstown, Pa. B2
13/64–1¾ x 2–2 13/64	Lackawanna, N.Y. B2
13/64–2 x 2½–2 13/64	Johnstown, Pa. B2
13/64–2¼ x 2½–2 29/64	Lackawanna, N.Y. B2
13/64–2½ x 2¾–4	Lackawanna, N.Y. B2
.214–½ x 1¾–4	Ecorse, Mich. G5
.214–¾ x 1¾–2½	Ecorse, Mich. G5
7/32–1¼ x 1½–3½	Canton, O. R2
7/32–7/8 x 1–1 1/16	Lackawanna, N.Y. B2
7/32–1⅛ x 1–1½	Bethlehem, Pa. B2
7/32–2 1/16 x 2 7/16–2 13/16	Johnstown, Pa. B2
7/32–2⅛ x 2½–2 13/16	Johnstown, Pa. B2
7/32–2¼ x over 1½–2½	Bethlehem, Pa. B2
7/32–2¼ x 2¾–2 15/16	Johnstown, Pa. B2
7/32–2⅜ x 2⅝–2 15/16	Johnstown, Pa. B2
7/32–2½ x 3–3 3/16	Johnstown, Pa. B2
7/32–3 x over 2½–3½	Bethlehem, Pa. B2
7/32–3 x 3½–4½	Bethlehem, Pa. B2
7/32–3 x 4–6	Johnstown, Pa. B2
1/8 x ¾–4	Corry, Pa. M14
1/8–⅛ x ½–1½	Houston S5
1/8 x 1–1⅝	Portland, Oreg. O4
1/8–⅜ x 1⅛	South Chicago, Ill. R2
1/8–⅜ x 3 3/32–3 1/16	Youngstown U5
1/8–½ x 1⅛	South Chicago, Ill. R2
1/8–½ x 1¼	South Chicago, Ill. R2
1/8–½ x 1⅜	Portland, Oreg. O4
1/8–⅝ x ⅝–4	Struthers, O. Y1
1/8–⅝ x over 1½–6	Aliquippa, Pa. J5
1/8–¾ x 1–4	Canton, O. R2
1/8–¾ x ¾–6	Buffalo R2
1/8–⅞ x 1–4	Fairless, Pa. U5
1/8–⅞ x 1½–6½	Midland, Pa. C18
1/8–⅞ x 1⅜	Portland, Oreg. O4
1/8–⅞ x 3¼	Portland, Oreg. O4
1/8–⅞ x 1–6	Indiana Harbor, Ind. Y1
1/8–1 x 1½	Portland, Oreg. O4
1/8–1 x 1½	South Chicago, Ill. R2
1/8–1 x 1⅝	South Chicago, Ill. R2
1/8–1 x 2	Portland, Oreg. O4
1/8–1 x 2–2½	Fontana, Calif. K1
1/8–1 x 2¼	Portland, Oreg. O4
1/8–1 x 2½	Portland, Oreg. O4
1/8–1 x 2⅝	Portland, Oreg. O4
1/8–1 x 3	Portland, Oreg. O4
1/8–1 x 3½	Portland, Oreg. O4
1/8–1 x 3½	Youngstown U5
1/8–1 x 4	Portland, Oreg. O4
1/8–1 x 4½	Portland, Oreg. O4
1/8–1 x 5	Portland, Oreg. O4
1/8–1 x 5½	Portland, Oreg. O4
1/8–1 x 6	Portland, Oreg. O4
1/8–1½ x 2–2 7/16	South Chicago, Ill. R2
1/8–1⅛ x 2½–2 11/16	South Chicago, Ill. R2
1/8–1½ x 3–3 7/16	South Chicago, Ill. R2
1/8–1½ x 3–6	Fontana, Calif. K1
1/8–1 7/16 x 5/8–1 13/16	Youngstown U5
1/8–2 x 3½–6	South Chicago, Ill. R2
1/8–2½ x 6¼–8	Bethlehem, Pa. B2
1/8–2¾ x 4 3/16–6	Lackawanna, N.Y. B2
1/8–3 x 3½	Gary, Ind. U5
1/8–3 x 3 3/32–3 1/16	Gary, Ind. U5
1/8–3 x 4–6	Economy, Pa. B14
1/8–3 x 4¾–6	Bethlehem, Pa. B2
1/8–3 7/16 x 3½–6	Clairton, Pa. U5
1/8–3 7/16 x 3 61/64–6	Gary, Ind. U5
.259–.30 x 7/64–1½	Tacony, Phila. D4
.259–.30 x 1⅝–3½	Tacony, Phila. D4
7/64 x 3/64–1 7/16	Tacony, Phila. D4
7/64–⅝ x 1–6	Houston S5
7/64–7/8 x 1¼–3½	Tacony, Phila. D4
7/64–1½ x 4 1/16–5⅝	Canton, O. R2
9/64 x 33/64–1⅝	Tacony, Phila. D4
9/64 x ½–6	Corry, Pa. M14
9/64–¾ x 1½	Fontana, Calif. K1
9/64–¾ x 1¾	Fontana, Calif. K1
9/64–1 x 1 13/16–1 29/32	South Chicago, Ill. R2
9/64–1 x 2 23/64–3	Youngstown U5
9/64–1 x 3 3/64–3 3/64	Youngstown U5
9/64–1 7/16 x 2 1/64–2½	Youngstown U5
9/64–1⅝ x 2	Youngstown U5
9/64–1⅝ x 1½–1 61/64	Duquesne, Pa. U5
9/64–2 x 1/64–2 1/64	Youngstown U5
9/64–2 x 2 1/64–3	Youngstown U5
9/64–2 x 2 1/64–3 3/64	Youngstown U5
9/64–2 x 3 1/64–3 3/64	Youngstown U5
9/64–2 x 3 1/64–4	Youngstown U5
9/64–2 x 4 1/64–5	Youngstown U5
9/64–2 x 5 1/64–6	Youngstown U5
9/64–2 x 6 1/64–8	Youngstown U5
9/64–2 x 8 1/64–10	Youngstown U5
9/64–2 x 10 1/64–12	Youngstown U5
9/64–2 x 12

BARS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Flats, Hot-Rolled (high-strength)

Sizes (inches)	Mill Point, Producer
1/32–1/16 x 1/16–1/2	Sterling,Ill. C23
1/8 x 1/8–4	Atlanta A11
1/8–1/64 x 1-4 1/2	IndianaHarbor,Ind. I-2
1/16 x 1/8–4	Atlanta A11
1/16–1/64 x 3/8–4 1/2	Struthers,O. Y1
1/16–1/64 x 2-3	Gary,Ind. U5
1/16–1/64 x 2-3	Youngstown U5
1/16–1/64 x 3 1/64–4 1/2	Gary,Ind. U5
1/16–1/64 x 3 1/64–4 1/2	Youngstown U5
1/16–1/8 x 2 1/2–6	Weirton,W.Va. W6
1/16–1 17/64 x 1/8–1 29/64	Gary,Ind. U5
1/4 x 1/8–6	Atlanta A11
1/4 x 3/8–4	Corry,Pa. M14
1/4 x 3/8–6	Houston 85
1/4–1/8 x 1/2	S.SanFrancisco B3
1/4–3/8 x 1/8	S.SanFrancisco B3
1/4–3/8 x 1	Fairfield,Ala. T2
1/4–3/8 x 1 1/4	Fairfield,Ala. T2
1/4–3/8 x 1 1/2	Fairfield,Ala. T2
1/4–3/8 x 3 33/64–3 1/2	Youngstown U5
1/4–1/2 x 3/8	S.SanFrancisco B3
1/4–1/2 x 3/4–6	IndianaHarbor,Ind. I-2
1/4–1/2 x 3 1/4	Seattle B3
1/4–21/64 x 3/4–6	Struthers,O. Y1
1/4–5/16 x 1/8	Seattle B3
1/4–5/16 x 1/8	S.SanFrancisco B3
1/4–5/16 x 1/4	S.SanFrancisco B3
1/4–5/16 x 1	S.SanFrancisco B3
1/4–5/16 x 1 1/4	S.SanFrancisco B3
1/4–5/16 x 3/4–7/8	Bessemer,Ala. T2
1/4–5/16 x 1 3/4	Fairfield,Ala. T2
1/4–5/16 x 2	Fairfield,Ala. T2
1/4–3/8 x 1	Seattle B3
1/4–3/8 x 1-4	Fairless,Pa. U5
1/4–7/8 x 1-6	IndianaHarbor,Ind. Y1
1/4–1 x 1 1/8	Seattle B3
1/4–1 x 1 1/2	Seattle B3
1/4–1 x 1 1/2	S.SanFrancisco B3
1/4–1 x 1 3/4	LosAngeles B3
1/4–1 x 1 3/4	S.SanFrancisco B3
1/4–1 x 2	S.SanFrancisco B3
1/4–1 x 2 1/4	S.SanFrancisco B3
1/4–1 x 2 1/2	S.SanFrancisco B3
1/4–1 x 2 1/2	LosAngeles B3
1/4–1 x 2 3/4	S.SanFrancisco B3
1/4–1 x 3	LosAngeles B3
1/4–1 x 3 1/4	S.SanFrancisco B3
1/4–1 x 3 1/2	LosAngeles B3
1/4–1 x 3 1/2	Youngstown U5
1/4–1 x 4	LosAngeles B3
1/4–1 x 4 1/2	LosAngeles B3
1/4–1 x 5	LosAngeles B3
1/4–1 x 6	LosAngeles B3
1/4–1 1/8 x 5 1/8–5 1/2	Bessemer,Ala. T2
1/4–1 1/2 x 1 1/2–6	Fontana,Calif. K1
1/4–1 1/2 x 1 3/8	Seattle B3
1/4–1 1/2 x 2	LosAngeles B3
1/4–1 1/2 x 2	Seattle B3
1/4–1 1/2 x 2 1/4	LosAngeles B3
1/4–1 1/2 x 2 1/4	Seattle B3
1/4–1 1/2 x 2 1/2	LosAngeles B3
1/4–1 1/2 x 2 1/2	Seattle B3
1/4–1 1/2 x 2 3/4	Seattle B3
1/4–1 1/2 x 3	S.SanFrancisco B3
1/4–1 1/2 x 3 1/2	S.SanFrancisco B3
1/4–1 1/2 x 4	S.SanFrancisco B3
1/4–1 1/2 x 4 1/2	S.SanFrancisco B3
1/4–1 1/2 x 5	S.SanFrancisco B3
1/4–1 1/2 x 6	S.SanFrancisco B3
1/4–1 47/64 x 5/8–1 29/64	Youngstown U5
1/4–1 3/4 x 2 1/4	Bessemer,Ala. T2
1/4–2 x 2 1/2–3 1/2	Bessemer,Ala. T2
1/4–2 x 3	Seattle B3
1/4–2 x 3 1/2	Seattle B3
1/4–2 x 4	Seattle B3
1/4–2 x 4–5	Bessemer,Ala. T2
1/4–2 x 4 1/2	Seattle B3
1/4–2 x 5	Seattle B3
1/4–2 x 6	Bessemer,Ala. T2
1/4–2 x 6	Seattle B3
1/4–3 x 3 1/2	Gary,Ind. U5
1/4–3 x 3 33/64–3 1/2	Gary,Ind. U5
1/4–3 1/8 x 3 1/2–6	Clairton,Pa. U5
1/4–3 1/8 x 3 61/64–6	Gary,Ind. U5
1/4 x 5/8–6	Atlanta A11
1/4–5/8 x 1–6	Houston 85
1/4–1/2 x 3/4	Seattle B3
5/16 x 1/2–6	Corry,Pa. M14
5/16 x 3/4–6	Atlanta A11
5/16–1 x 2 23/64–3	Youngstown U5
5/16–1 x 3 7/64–3 21/64	Youngstown U5
5/16–1 x 3 3/8	Bessemer,Ala. T2
5/16–1 7/64 x 2 31/64–2 1/2	Youngstown U5
5/16–1 3/8 x 2	Youngstown U5
5/16–1 3/8 x 2	Gary,Ind. U5
5/16–1 3/8 x 2–3 33/64	Duquesne,Pa. U5
5/16–2 1/4 x 2 1/64–2 1/2	Gary,Ind. U5
5/16–2 1/2 x 2 21/64–3	Gary,Ind. U5
5/16–2 23/64 x 3 1/64–3 21/64	Gary,Ind. U5
5/16–3 1/4 x 1–6	Ecorse,Mich. G5
7/32 x 3/8–3 1/4	Atlanta A11
7/32–3/8 x 1 1/2–6	Houston 85
3/8 x 1/2–6	Corry,Pa. M14
3/8 x 3/8–6	Atlanta A11
3/8–1 x 2 23/64–3	Youngstown U5
3/8–1 x 3 7/64–3 21/64	Youngstown U5
3/8–1 x 3 3/8	Bessemer,Ala. T2
3/8–1 7/64 x 2 31/64–2 1/2	Youngstown U5
3/8–1 3/8 x 2	Youngstown U5
3/8–1 3/8 x 2	Gary,Ind. U5
3/8–1 3/8 x 2–3 33/64	Duquesne,Pa. U5
3/8–2 1/4 x 2 1/64–2 1/2	Gary,Ind. U5
3/8–2 1/2 x 2 21/64–3	Gary,Ind. U5
3/8–2 23/64 x 3 1/64–3 21/64	Gary,Ind. U5
3/8–3 1/4 x 1–6	Ecorse,Mich. G5
7/16 x 3/8–3 1/4	Atlanta A11
7/16–3/8 x 1 1/2–6	Houston 85
1/2 x 3/8–6	Corry,Pa. M14
1/2 x 3/8–6	Atlanta A11
1/2 x 1	Fairfield,Ala. T2
1/2 x 1 1/4	Fairfield,Ala. T2
1/2–5/8 x 1 1/2	Fairfield,Ala. T2
1/2–1 x 1-3 1/4	Atlanta A11
1/2–1 1/64 x 1-6	Struthers,O. Y1
1/2–1 1/8 x 1-6	IndianaHarbor,Ind. I-2
1/2–1 1/8 x 1-6	Duquesne,Pa. U5
1/2–1 1/8 x 1 1/8	Atlanta A11
1/2–1 1/8 x 1-6	Corry,Pa. M14
1/2–1 1/8 x 1 1/2	LosAngeles B3
1/2–1 1/4 x 1 3/8–3 1/4	Atlanta A11
1/2–1 1/4 x 3/8–6	Struthers,O. Y1
1/2–1 1/4 x 1	Bessemer,Ala. T2
1/2–1 1/4 x 1 1/8–1 3/8	Bessemer,Ala. T2
1/2–1 1/4 x 1 1/2–1 3/8	Bessemer,Ala. T2
1/2–1 3/8 x 1 3/8	Bessemer,Ala. T2
1/2–1 1/2 x 2	Bessemer,Ala. T2
5/8 x 1 3/8–6	Atlanta A11
5/8–11/16 x 1–6	Struthers,O. Y1
5/8–3/4 x 1 1/2–6	Struthers,O. Y1
5/8–7/8 x 1 1/2–6	Atlanta A11
5/8–7/8 x 2 1/4–5	Houston 85
5/8–7/8 x 1 7/32–6	IndianaHarbor,Ind. Y1
5/8–7/8 x 1 3/4–6	Struthers,O. Y1
1 x 1 1/2–6	Atlanta A11
1 x 2–6	Houston 85
1–1 1/4 x 1 1/8–10	Corry,Pa. M14
1–1 1/32 x 1 3/8–6	IndianaHarbor,Ind. Y1
1–1 1/2 x 1 1/4–6	IndianaHarbor,Ind. I-2
1 1/8–1 1/4 x 1 1/4–6	Struthers,O. Y1
1 1/8–1 1/32 x 1 3/8–6	Struthers,O. Y1
1 1/4–1 1/2 x 4–6	Houston 85
1 1/8–1 23/64 x 1 1/2–6	Struthers,O. Y1
1 1/8–1 3/32 x 1 3/8–6	IndianaHarbor,Ind. Y1
1 3/8–1 3/8 x 1 1/2–10	Corry,Pa. M14
1 1/2–1 23/64 x 1 3/8–6	Struthers,O. Y1
1 3/8–1 47/64 x 1 3/8–6	Struthers,O. Y1
1 3/8–1 47/64 x 2–6	IndianaHarbor,Ind. Y1
1 3/8–1 53/64 x 1 7/8–6	Struthers,O. Y1
1 3/8–1 53/64 x 2 7/16–6	IndianaHarbor,Ind. Y1
1 49/64–2 1/4 x 2 1/64–2 1/2	Youngstown U5
1 49/64–2 1/2 x 2 21/64–3	Youngstown U5
1 49/64–2 63/64 x 3 1/64–3 21/64	Youngstown U5
1 7/8–2 x 2 1/8–6	IndianaHarbor,Ind. Y1
1 7/8–3 x 2–12	Corry,Pa. M14
3 1/8–5 x 3 1/4–16	Corry,Pa. M14

Flats, Cold-Finished (carbon)

Sizes (inches)	Mill Point, Producer
1/32–1/16 x 1/16–1/2	Sterling,Ill. C23
1/8 x 1/8–12	McCook,Ill. M19
1/8–7/64 x 1/8–1/2	Massillon,O. R5
1/8–1/2 x 1/8–1	Aliquippa,Pa. K5
3/16–3 x 1/8–12	Harvey,Ill. B5
1/4 x 1/8–2	Camden,N.J. P13
1/4 x 1/8–4	BeaverFalls,Pa. R2
1/4 x 1/8–12	McCook,Ill. M19
1/4 x 2	Youngstown F3
1/4 x 4–6	Pittsburgh J5
1/4–under 1/8 x 1/8–1 1/4	Carnegie,Pa. C12
1/4–7/64 x 1/8–6	BeaverFalls,Pa. M12
1/4–7/64 x 3/8–3	Hammond,Ind. L2
1/4–5/16 x up to 1/16 incl.	Hartford,Conn. R2
1/4–5/16 x 1/8–1	Monaca,Pa. S17
1/4–7/32 x up to 1/16 incl.	Massillon,O. R2
1/4–1 x 1/4–4	Newark,N.J. W18
1/4–1 x 1–6 incl.	SpringCity,Pa. K3
1/4–2 x 1/8–6	Hammond,Ind. M13
1/4–2 x 1/4–6	Chicago W18
1/4–2 x 1/4–12	Ambridge,Pa. W18
1/4–3 x 1/4–3 1/2	Pittsburgh J5
1/4–3 x 1/4–4	Chicago W18
1/4–3 x 1/4–6	Ambridge,Pa. W18
1/4–3 x 1/16–12	Buffalo B5
.145–1/2 x .356–1	N.Tonawanda,N.Y. B11
5/16 x 1/8–12	McCook,Ill. M19
5/16 x 1/8–1	Camden,N.J. P13
5/16 x 1/8–6	BeaverFalls,Pa. R2
5/16 x 1/8–12	McCook,Ill. M19
5/16 x 4	Youngstown F3
5/16–under 1/4 x 1/8–2	Carnegie,Pa. C12
5/16–1/4 x 1–21	NewCastle,Pa. B4
5/16–3/8 x 2–14	Worcester,Mass. W19
5/16–2 x 5–6	Pittsburgh J5
5/16–2 1/2 x over 6–14 3/8	Pittsburgh J5
5/16–3 x 4–6 1/2	Pittsburgh J5
over 5/16–2 x 1/16–12	Hammond,Ind. L2
1/8 x 1/8–1	Camden,N.J. P13
1/8 x 1/8–12	McCook,Ill. M19
1/4–under 3/8 x 1/8–3	Carnegie,Pa. C12
1/4–3/8 x 1 1/4–16	NewCastle,Pa. B4
1/4–3/8 x 1/8–3/8	Mansfield,Mass. B5
1/4–1 x 1/8–3 1/2	Plymouth,Mich. P5
1/4–1 x 1/16–4	Detroit B5
1/4–1 x 1/8–6	Camden,N.J. P13
1/4–1 x 3/8–3 1/4	Cleveland A7
1/4–1 x 3/8–6	Youngstown Y1
1/4–1 1/8 x 1/8–6	Youngstown F3
1/4–1 1/8 x 1–4	LosAngeles S30
1/4–1 1/8 x 8–12	BeaverFalls,Pa. M12
1/4–2 x 1/8–12	BeaverFalls,Pa. R2
1/4–2 1/2 x 1/16–6	BeaverFalls,Pa. M12
5/16 x 1/8–12	McCook,Ill. M19
3/8 x 1/8–12	McCook,Ill. M19
3/8–1 1/4 x 1/8–8	Youngstown F3
3/8–1 1/2 x 1–2 1/2	Monaca,Pa. S17
3/8–4 x 33/64–12	Carnegie,Pa. C12
1/2 x 3/8–12	McCook,Ill. M19
5/8 x 5/8–12	McCook,Ill. M19
3/4 x 1–12	McCook,Ill. M19
1 x 1 1/4–12	McCook,Ill. M19
1–2 x over 1–4	Camden,N.J. P13
over 1 1/4–2 1/2 x 1 1/8–6	Youngstown F3
over 2–3 x over 2–12	Hammond,Ind. L2
2 1/16–2 1/2 x up to 6	BeaverFalls,Pa. R2
2 1/16–3 x 5–6	Pittsburgh J5
2 1/16–3 x 2 3/4–6	Youngstown F3
2 3/4–3 x 3–5	BeaverFalls,Pa. M12

BARS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Squares

Hot-Rolled (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
5/16–2	Tacony,Phila. D4
7/16–1 1/4	Atlanta A11
7/16–2 1/4	Struthers,O. Y1
7/16–4 1/2	Minnequa,Colo. C10
11/16–1 5/8	Fairfield,Ala. T2
5/8–7/8	Ind.Harbor,Ind. Y1
5/8–1	JerseyCity,N.J. A17
5/8–1	KansasCity,Mo. S5
5/8–1	Torrance,Calif. C11
5/8–1 1/4 †	Tonawanda,N.Y. B12
5/8–1 5/8	Youngstown U5
5/8–1 1/2	Alton,Ill. L1
5/8–1 1/2 †	ChicagoHts.,Ill. C2
5/8–1 1/2 †	Franklin,Pa. F5
5/8–1 1/2	LosAngeles B3
5/8–1 1/2	Madison,Ill. L1
5/8–2	IndianaHarbor,Ind. I-2
5/8–2	Seattle B3
5/8–2 1/16	SouthChicago,Ill. R2
5/8–2 1/2	Johnstown,Pa. B2
5/8–2 1/2	Joliet,Ill. P22
5/8–2 3/8	Lackawanna,N.Y. B2
5/8–2 1/2	Pittsburgh J5
5/8–3	Houston S5
5/8–3	Midland,Pa. C18
5/8–3 1/2	Knoxville,Tenn. K6
5/8–3 1/2	S.SanFrancisco B3
5/8–3 3/4	Bessemer,Ala. T2
5/8–4 1/16	Gary,Ind. U5
5/8–4 1/2	SouthChicago,Ill. W14
7/8–1 1/4	Richmond,Va. T10
7/8–1 1/4 †	Williamsport,Pa. S19
7/8–2 1/16	Cleveland R2
1/2–5/8	Milton,Pa. M18
1/2–7/8	St.Louis M11
1/2–1	Birmingham C15
1/2–1	Huntington,W.Va. W7
1/2–1	Pittsburg,Calif. C11
1/2–1 1/4 †	ChicagoHts.,Ill. I-2
1/2–1 1/4	Fairless,Pa. U5
1/2–1 1/2	N.Tonawanda,N.Y. B11
1/2–1 1/2	Sterling,Ill. N15
1/2–2	Ecorse,Mich. G5
1/2–2 3/4	Fontana,Calif. K1
1/2–3	Portland,Oreg. O4
1/2–4	Warren,O. C17
1/2–12	Corry,Pa. M14
9/16–7/8 †	St.Louis M11
9/16–2 3/4	Niles,Calif. P1
1 1/16–2 5/16	Buffalo R2
1 7/16–5 1/2	Duquesne,Pa. U5
2–4 1/2	Economy,Pa. B14

†Rail steel.

Hot-Rolled (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
5/16–2	Tacony,Phila. D4
1/4–2 1/2	Canton,O. R2
7/16–2 1/4	Struthers,O. Y1
7/16–10	Canton,O. T7
7/16–7/8	IndianaHarbor,Ind. Y1
5/8–1 5/8	Youngstown U5
5/8–2 1/2	Johnstown,Pa. B2
5/8–2 1/2	Lackawanna,N.Y. B2
5/8–2 1/2	Pittsburgh J5
5/8–3	Houston S5
5/8–3	Midland,Pa. C18
5/8–3 1/2	Bethlehem,Pa. B2
5/8–4 1/16	Gary,Ind. U5
7/8–2 1/2	SouthChicago,Ill. R2
1 1/16–2 1/2	Fairless,Pa. U5
1/2–1 5/8	Ecorse,Mich. G5
1/2–3	Portland,Oreg. O4
1/2–4	Warren,O. C17
1/2–12	Corry,Pa. M14
1 1/16–2 5/16	Buffalo R2
1 7/16–5 1/2	Duquesne,Pa. U5
2–4	Economy,Pa. B14
Check with mill for sizes	Fontana,Calif. K1

Hot-Rolled (high-strength)

Sizes Min.-Max. (inches)	Mill Point, Producer
7/16–1/4	Sterling,Ill. C23
7/16–1 1/4	Atlanta A11
7/16–2 1/4	Struthers,O. Y1
11/16–1 5/8	Fairfield,Ala. T2
5/8–7/8	IndianaHarbor,Ind. Y1
5/8–1 5/8	Youngstown U5
5/8–1 1/2	LosAngeles B3
5/8–2	IndianaHarbor,Ind. I-2
5/8–2	Seattle B3
5/8–3	Houston S5
5/8–3 1/2	S.SanFrancisco B3
5/8–3 3/4	Bessemer,Ala. T2
5/8–4 1/16	Gary,Ind. U5
7/8–1 1/4	Fairless,Pa. U5
1/2–2	Ecorse,Mich. G5
1/2–12	Corry,Pa. M14
9/16–2 3/4	Fontana,Calif. K1
1 7/16–5 1/2	Duquesne,Pa. U5

Cold-Finished (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
1/16–1/4	Sterling,Ill. C23
1/16–1	Aliquippa,Pa. K5
1/16–4	Hammond,Ind. M13
1/8–4 1/2	Harvey,Ill. B5
1/8–1/2	Massillon,O. R8
1/8–2 1/2	Newark,N.J. W18
1/8–3	Chicago W18
1/8–4	Pittsburgh J5
1/8–4 1/2	Ambridge,Pa. W18
1/8–7/8	Massillon,O. R2
1/8–2	Gary,Ind. R2
1/8–2	Hartford,Conn. R2
1/8–2	LosAngeles S30
1/8–4	BeaverFalls,Pa. M12
1/4–.442	Waukegan,Ill. A7
1/4–1 1/16	Cleveland A7
1/4–2	Detroit B5
1/4–2	Elyria,O. W8
1/4–2	LosAngeles R2
1/4–2	Mansfield,Mass. B5
1/4–2 1/4	Cleveland C20
1/4–2 5/16	Plymouth,Mich. P5
1/4–3	Camden,N.J. P13
1/4–3 incl.	SpringCity,Pa. K3
1/4–4	Hammond,Ind. L2
1/4–4	Youngstown F3
1/4–4 1/2	Buffalo B5
5/16–1 5/8	Midland,Pa. C18
5/16–1 5/8	Monaca,Pa. S17
5/16–2	Youngstown Y1
5/16–2 1/2	McCook,Ill. M19
5/16–4	Carnegie,Pa. C12
7/16–2	Warren,O. C17
1/2–4	BeaverFalls,Pa. R2
5/8–1 1/2	Detroit P17
Check with mill for sizes	Aliquippa,Pa. K5

Cold-Finished (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
1/16–1/4	Sterling,Ill. C23
1/16–1	Aliquippa,Pa. K5
1/16–2	Hammond,Ind. M13
1/16–4	Harvey,Ill. B5
1/8–1/2	Massillon,O. R8
1/8–1 1/2	Hartford,Conn. R2
1/8–2 1/2	Massillon,O. R2
1/8–2 1/2	Newark,N.J. W18
1/8–3	Chicago W18
1/8–4 1/2	Ambridge,Pa. W18
1/8–1 7/8	Gary,Ind. R2
1/8–4	BeaverFalls,Pa. M12
1/8–.442	Waukegan,Ill. A7
1/4–1 1/16	Cleveland A7
1/4–2	Detroit B5
1/4–2	Elyria,O. W8
1/4–2	Mansfield,Mass. B5
1/4–2 1/4	Cleveland C20
1/4–2 5/16	Plymouth,Mich. P5
1/4–2 1/2	SpringCity,Pa. K3
1/4–3	Hammond,Ind. L2
1/4–4	Youngstown F3
1/4–4 1/2	Buffalo B5
5/16–1 5/8	Midland,Pa. C18
5/16–1 5/8	Monaca,Pa. S17
5/16–2	Youngstown Y1
5/16–2 1/2	Bethlehem,Pa. B2
5/16–4	Carnegie,Pa. C12
7/16–2	Warren,O. C17

Squares, Round Cornered

Hot-Rolled (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
5/16–1/2	Youngstown U5
5/16–2 1/2	Gadsden,Ala. R2
5/16–2 1/2	Pittsburgh J5
5/16–3 5/8	Johnstown,Pa. B2
5/16–6 1/2	Midland,Pa. C18
1/2–1 1/2	Sterling,Ill. N15
1/2–3 1/2	Cleveland R2
1/2–4	Huntington,W.Va. W7
1/2–12	Warren,O. C17
3/4–1	ChicagoHts.,Ill. I-2
3/4–4	Gary,Ind. U5
3/4–4 1/2	SouthChicago,Ill. W14
7/8–3 3/4	Lackawanna,N.Y. B2
1 1/16–4 5/16	Ecorse,Mich. G5
1–1 1/4 †	Williamsport,Pa. S19
1–2 1/4	Seattle B3
1–7	Duquesne,Pa. U5
1–7 1/2	SouthChicago,Ill. R2
1–19	Detroit R7
1 1/16	Fairfield,Ala. T2
1 1/16–6	Buffalo R2
1 1/16–3	Richmond,Va. T10
1 5/16–2 1/4	Struthers,O. Y1
1 1/16–3	IndianaHarbor,Ind. I-2
1 1/16–6	IndianaHarbor,Ind. Y1
1 1/2	Atlanta A11
1 1/2–3	Fontana,Calif. K1
1 1/2–3	Niles,Calif. P1
2–4	Owensboro,Ky. G8

†Rail steel.

Hot-Rolled (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
5/16–1/2	Youngstown U5
5/16–2 1/4	Struthers,O. Y1
5/16–2 1/2	Pittsburgh J5
5/16–3 5/8	Johnstown,Pa. B2
5/16–3 1/2	Canton,O. R2
5/16–6 1/2	Midland,Pa. C18
1/2–12	Warren,O. C17
3/4–4	Gary,Ind. U5
7/8–3 3/4	Lackawanna,N.Y. B2
7/8–6	Bethlehem,Pa. B2
1 1/16–4 5/16	Ecorse,Mich. G5
1–3 1/8	SouthChicago,Ill. R2
1–7	Duquesne,Pa. U5
1–19	Detroit R7
1 1/16–3 7/8	Buffalo R2
1 1/16–6	IndianaHarbor,Ind. Y1
1 1/2–5 1/2	SouthChicago,Ill. U5
2–3 3/4	Houston S5
2–4	Owensboro,Ky. G8
Check with mill for sizes	Fontana,Calif. K1

Hot-Rolled (high-strength)

Sizes Min.-Max. (inches)	Mill Point, Producer
7/16–5/8	Sterling,Ill. C23
7/16–1/2	Youngstown U5
5/8–4	Gary,Ind. U5
1 1/16–4 5/16	Ecorse,Mich. G5
1–2 1/4	Seattle B3
1–7	Duquesne,Pa. U5
1–19	Detroit R7
1 1/4	Fairfield,Ala. T2
1 5/8–2 1/2	Struthers,O. Y1
1 1/16–6	IndianaHarbor,Ind. Y1
1 1/2	Atlanta A11
1 1/2–2 3/4	Fontana,Calif.K1

Cold-Finished (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
1/16–5/8	Sterling,Ill. C23
1/16–1/2	Massillon,O. R8
1/4–2 1/4	Cleveland C20
1/4–3	SpringCity,Pa. K3
5/16–2	Youngstown Y1
5/16–1 1/2	Detroit P17
Check with mill for sizes	Aliquippa,Pa. K5
Check with mill for sizes	Ambridge,Pa. W18
Check with mill for sizes	Chicago W18
Check with mill for sizes	Hammond,Ind. L2
Check with mill for sizes	Newark,N.J. W18
Check with mill for sizes	Putnam,Conn. W18

Cold-Finished (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
1/16–5/8	Sterling,Ill. C23
1/4–1/2	Massillon,O. R8
1/4–2 1/4	Cleveland C20
5/16–2	Youngstown Y1
Check with mill for sizes	Aliquippa,Pa. K5
Check with mill for sizes	Ambridge,Pa. W18
Check with mill for sizes	Chicago W18
Check with mill for sizes	Hammond,Ind. L2
Check with mill for sizes	Newark,N.J. W18
Check with mill for sizes	Putnam,Conn. W18

BARS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Rounds

Hot-Rolled (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
5/16–4 1/2	Tacony,Phila. D4
1/2–1	St.Louis M11
1/4–1 1/2	Sterling,Ill. N15
1/4–1 5/8	Atlanta A11
1/4–1 3/4	Fairfield,Ala. T2
1/4–2	KansasCity,Mo. S5
1/4–2 1/2	Gadsden,Ala. R2
1/4–2 7/16	Struthers,O. Y1
1/4–4	Houston S5
1/4–9 1/2	SouthChicago,Ill. R2
7/16–2	Madison,Ill. L1
21/64–3 1/16	IndianaHarbor,Ind. I-2
21/64–3 1/2	Cleveland R2
21/64–4 3/4	SouthChicago,Ill. W14
21/64–6	Buffalo R2
.365–4 1/2	Lackawanna,N.Y. B2
.365–4 1/2	Pittsburgh J5
.365–8	Johnstown,Pa. B2
3/8–1 1/4 †	Tonawanda,N.Y. B12
3/8–1 1/2	Emeryville,Calif. J7
3/8–1 1/2	N.Tonawanda,N.Y. B11
3/8–1 1/2	Pittsburg,Calif. C11
3/8–1 5/8 †	ChicagoHts.,Ill. C2
3/8–1 3/4 †	Franklin,Ill. F5
3/8–2 1/2	Joliet,Ill. P22
3/8–2 1/2	LosAngeles B3
3/8–3 1/4	Youngstown U5
3/8–3 1/2	S.SanFrancisco B3
3/8–3 1/2	Torrance,Calif. C11
3/8–3 3/4	Bessemer,Ala. T2
3/8–3 5/8	Seattle B3
3/8–4	Knoxville,Tenn. K6
3/8–4 1/2	Ecorse,Mich. G5
3/8–5 1/2	IndianaHarbor,Ind. Y1
3/8–5 1/2	Minnequa,Colo. C10
3/8–6 1/4	Gary,Ind. U5
3/8–8 3/4	Midland,Pa. C18
7/16–1 3/8 †	Williamsport,Pa. S19
7/16–1 1/2	JerseyCity,N.J. A17
7/16–6	Niles,Calif. P1
7/16–2	Fairless,Pa. U5
15/32–2	Fairless,Pa. U5
1/2–1†	Madison,Ill. L1
1/2–1 1/16 †	St.Louis M11
1/2–1 1/4	Birmingham C15
1/2–1 1/4 †	ChicagoHts.,Ill. I-2
1/2–1 1/4	Tonawanda,N.Y. B12
1/2–1 1/2	Milton,Pa. M18
1/2–1 1/2	Richmond,Va. T10
1/2–3	Portland,Oreg. O4
1/2–3 1/4	Fontana,Calif. K1
1/2–4 1/2	Detroit R7
1/2–7 1/2	Warren,O. C17
1/2–9	Duquesne,Pa. U5
1/2–12	Corry,Pa. M14
1/2–3 3/8	Youngstown R2
5/8–4	Huntington,W.Va. W7
2–5 1/4	Economy,Pa. B14
2 1/4–8 1/2	Owensboro,Ky. G8

†Rail steel.

Hot-Rolled (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
5/16–4 1/4	Tacony,Phila. D4
.220–8 1/2	Canton,O. R2
1/4–4	Houston S5
5/16–8	Canton,O. T7
21/64–6	Buffalo R2
3/8–2 1/2	Struthers,O. Y1
3/8–3 1/4	Youngstown U5
3/8–4 1/8	Lackawanna,N.Y. B2
3/8–4 1/2	Ecorse,Mich. G5
3/8–4 1/2	Pittsburgh J5
3/8–6	IndianaHarbor,Ind. Y1
3/8–6 1/4	Gary,Ind. U5
3/8–8	Johnstown,Pa. B2
3/8–8 3/8	Midland,Pa. C18
3/8–8 7/8	Bethlehem,Pa. B2
3/8–9 1/2	SouthChicago,Ill. R2
31/64–2	Fairless,Pa. U5
1/2–3	Portland,Oreg. O4
1/2–4 1/2	Detroit R7
1/2–7 1/2	Warren,O. C17
1/2–9	Duquesne,Pa. U5
1/2–12	Corry,Pa. M14
1 1/16–5	SouthChicago,Ill. U5
2–4 1/2	Economy,Pa. B14
2 1/4–8 1/2	Owensboro,Ky. G8
Check with mill for sizes	Fontana,Calif. K1

Hot-Rolled (high-strength)

Sizes Min.-Max. (inches)	Mill Point, Producer
1/4–1 5/8	Atlanta A11
1/4–2 7/16	Struthers,O. Y1
1/4–4	Houston S5
21/64–3 1/16	IndianaHarbor,Ind. I-2
3/8–1 3/4	Fairfield,Ala. T2
3/8–2 1/2	LosAngeles B3
3/8–3 1/4	Youngstown U5
3/8–3 1/2	S.SanFrancisco B3
3/8–3 3/4	Bessemer,Ala. T2
3/8–3 5/8	Seattle B3
3/8–4 1/2	Ecorse,Mich. G5
3/8–5 1/2	IndianaHarbor,Ind. Y1
3/8–6 1/4	Gary,Ind. U5
31/64–2	Fairless,Pa. U5
1/2–4 1/2	Detroit R7
1/2–9	Duquesne,Pa. U5
1/2–12	Corry,Pa. M14
5/8–4	Fontana,Calif. K1

Cold-Finished (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
.013–2	Aliquippa,Pa. K5
1/16–.760	Waukegan,Ill. A7
1/16–6	Cleveland A7
1/16–6	Hammond,Ind. M13
1/16–18	Pittsburgh J5
.090–6	Midland,Pa. C18
5/32–3/4	Struthers,O. Y1
1/8–5/8	Massillon,O. R8
1/8–3	Hartford,Conn. R2
1/8–6	Ambridge,Pa. W18
1/8–6	Chicago W18
1/8–6	Gary,Ind. R2
1/8–6	Newark,N.J. W18
1/8–8	Massillon,O. R2
1/8–9	Hammond,Ind. L2
1/8–14	Harvey,Ill. B5
9/64–3/4	FranklinPark,Ill. N5
9/64–2 1/2	Detroit B5
9/64–2 1/2	Mansfield,Mass. B5
9/64–14	Buffalo B5
5/32–3/4	GreenBay,Wis. F7
5/32–3	LosAngeles P2
5/32–3	LosAngeles R2
5/32–3 7/8	Elyria,O. W8
5/32–4 1/2	LosAngeles S30
5/32–5	Youngstown F3
5/32–6	BeaverFalls,Pa. M12
5/32–7 1/2	SpringCity,Pa. K3
11/64–2 1/2	Monaca,Pa. S17
11/64–2 1/2	Youngstown Y1
11/64–3	Cleveland C20
11/64–4 1/2	Plymouth,Mich. P5
11/64–6	Camden,N.J. P13
11/64–7 3/8	Canton,O. T7
11/64–9	Hammond,Ind. L2
3/16–2 1/2	SouthChicago,Ill. W14
3/16–6	Putnam,Conn. W18
13/64–4	Lackawanna,N.Y. B2
3/8–6 1/2	Carnegie,Pa. C12
3/8–8 5/8	Bethlehem,Pa. B2
7/16–6 1/2	Warren,O. C17
15/64–4 7/16	Detroit R7
1/2–3 1/2	BeaverFalls,Pa. R2
1/2–4 1/2	Detroit P17
1 1/16–6	St.Louis M5
1 1/16–8	Cumberland,Md. C19
1 1/16–6	Seattle S30

Cold-Finished (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
.013–2	Aliquippa,Pa. K5
1/16–.760	Waukegan,Ill. A7
1/16–6	Cleveland A7
1/16–6	Hammond,Ind. M13
.090–6	Midland,Pa. C18
5/32–3/4	Struthers,O. Y1
5/32–5/8	Massillon,O. R8
11/64–2 1/2	Hartford,Conn. R2
1/8–6	Ambridge,Pa. W18
1/8–6	Chicago W18
1/8–6	Newark,N.J. W18
1/8–8	Massillon,O. R2
1/8–14	Harvey,Ill. B5
9/64–2 1/2	Detroit B5
9/64–2 1/2	Mansfield,Mass. B5
9/64–6	Gary,Ind. R2
9/64–14	Buffalo B5
1/16–3/4	GreenBay,Wis. F7
1/16–3	LosAngeles P2
5/32–3	Youngstown F3
5/32–3 7/16	Elyria,O. W8
5/32–6	BeaverFalls,Pa. M12
5/32–6	SpringCity,Pa. K3
11/64–2 1/2	Monaca,Pa. S17
11/64–2 1/2	Youngstown Y1
11/64–3	Cleveland C20
11/64–4 1/2	Plymouth,Mich. P5
11/64–6	Camden,N.J. P13
11/64–7 3/8	Canton,O. T7
11/64–9	Hammond,Ind. L2
3/16–2 1/2	SouthChicago,Ill. W14
3/16–6	Putnam,Conn. W18
13/64–4	Lackawanna,N.Y. B2
3/8–6 1/2	Carnegie,Pa. C12
3/8–8 5/8	Bethlehem,Pa. B2
7/16–6 1/2	Warren,O. C17
15/64–4 7/16	Detroit R7

Half Rounds

Hot-Rolled (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
.314–1 1/16	Tacony,Phila. D4
3/8–3/4	Alton,Ill. L1
3/8–1 1/2	Atlanta A11
1/2–1 1/2	Huntington,W.Va. W7
1/2–1 1/2	Knoxville,Tenn. K6
1/2–3	Youngstown U5
5/8–1	Bessemer,Ala. T2
5/8–2 1/4	S.SanFrancisco B3

Hot-Rolled (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
.314–1 1/16	Tacony,Phila. D4
Check with mill for sizes	Youngstown U5

Hot-Rolled (high-strength)

Sizes Min.-Max. (inches)	Mill Point, Producer
1/4–1/2	Sterling,Ill. C23
1/4–1 1/2	Atlanta A11
1/2–3	Youngstown U5
5/8–1	Bessemer,Ala. T2
5/8–2 1/4	S.SanFrancisco B3

Cold-Finished (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
1/16–1/2	Sterling,Ill. C23
1/16–2	SpringCity,Pa. K3
Check with mill for sizes	Aliquippa,Pa. K5
Check with mill for sizes	Ambridge,Pa. W18
Check with mill for sizes	Chicago W18
Check with mill for sizes	Newark,N.J. W18
Check with mill for sizes	Putnam,Conn. W18
Check with mill for sizes	Youngstown F3

Cold-Finished (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
1/16–1/2	Sterling,Ill. C23
Check with mill for sizes	Aliquippa,Pa. K5
Check with mill for sizes	Ambridge,Pa. W18
Check with mill for sizes	Chicago W18
Check with mill for sizes	Newark,N.J. W18
Check with mill for sizes	Putnam,Conn. W18
Check with mill for sizes	Youngstown F3

BARS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Hexagons

Hot-Rolled (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
¼–1⅝	Tacony,Phila. D4
1 1/16–2 1/16	Struthers,O. Y1
⅝–1 1/16	IndianaHarbor,Ind. I-2
⅝–1 1/16	SouthChicago,Ill. R2
⅝–2	Ecorse,Mich. G5
⅝–2 1/16	Johnstown,Pa. B2
⅝–2 1/16	IndianaHarbor,Ind. Y1
⅝–2 1/16	Pittsburgh J5
⅝–2 1/16	Midland,Pa. C18
⅝–3 1/16	Gary,Ind. U5
⅝–3 1/16	Youngstown U5
½–⅞	Cleveland R2
½–1⅝†	ChicagoHts.,Ill. C2
½–1⅝†	Franklin,Pa. F5
½–2½	Warren,O. C17
½–5	Corry,Pa. M14
1 1/16–2 1/16	Youngstown R2
1 1/16–1 1/16	Lackawanna,N.Y. B2
⅞–1¼	Bessemer,Ala. T2
⅞–1½	Minnequa,Colo. C10
⅞–2⅛	Detroit R7
⅞	Fairless,Pa. U5
1⅛	Knoxville,Tenn. K6

†Rail steel.

Hot-Rolled (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
¼–1⅝	Tacony,Phila. D4
1 1/16–2	Canton,O. R2
1 1/16–2 1/16	Struthers,O. Y1
⅝–1 1/16	SouthChicago,Ill. R2
⅝–2 1/16	Johnstown,Pa. B2
⅝–2 1/16	IndianaHarbor,Ind. Y1
⅝–2 1/16	Pittsburgh J5
⅝–2 1/16	Midland,Pa. C18
⅝–3 1/16	Gary,Ind. U5
⅝–3 1/16	Youngstown U5
⅝–4 1/16	Bethlehem,Pa. B2
½–2½	Warren,O. C17
½–5	Corry,Pa. M14
1 1/16–1 1/16	Lackawanna,N.Y. B2
¾–2⅛	Detroit R7
⅞	Fairless,Pa. U5
Up to 2	Ecorse,Mich. G5

Hot-Rolled (high-strength)

Sizes Min.-Max. (inches)	Mill Point, Producer
1 1/16–1 1/16	Sterling,Ill. C23
1 1/16–2 1/16	Struthers,O. Y1
⅝–1 1/16	IndianaHarbor,Ind. I-2
⅝–2	Ecorse,Mich. G5
⅝–2 1/16	IndianaHarbor,Ind. Y1
⅝–3 1/16	Gary,Ind. U5
⅝–3 1/16	Youngstown U5
½–5	Corry,Pa. M14
¾–2⅛	Detroit R7
⅞	Fairless,Pa. U5

Cold-Finished (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
1 1/16–1	Aliquippa,Pa. K5
1 1/16–3	Hammond,Ind. M13
1 1/16–1 1/16	Sterling,Ill. C23
1 1/16–2 1/16	Massillon,O. R2
1 1/16–2	Hartford,Conn. R2
1 1/16–2½	Newark,N.J. W18
1 1/16–3	Chicago W18
1 1/16–3½	Ambridge,Pa. W18
1 1/16–3 1/16	Pittsburgh J5
1 1/16–2	Detroit B5
1 1/16–2	Mansfield,Mass. B5
1 1/16–4	Buffalo B5
1 1/16–4	Harvey,Ill. B5
1 1/16–2	Gary,Ind. R2
1 1/16–2	LosAngeles S30
1 1/16–2 1/16	Waukegan,Ill. A7
1 1/16–2	Elyria,O. W8
1 1/16–2	LosAngeles R2
1 1/16–2 1/32	Cleveland A7
1 1/16–2 1/16	Cleveland C20
1 1/16–3	Camden,N.J. P13
1 1/16–3	Hammond,Ind. L2
1 1/16–3	SpringCity,Pa. K3
1 1/16–3½	Youngstown F3
1 1/16–2	Youngstown Y1
1 1/16–2⅝	Plymouth,Mich. P5
1 1/16–3⅛	BeaverFalls,Pa. M12
⅝–1¾	Monaca,Pa. S17
⅝–2	Putnam,Conn. W18
⅝–2¼	Midland,Pa. C18
1 1/16–2	Warren,O. C17
1 1/16–3⅛	Carnegie,Pa. C12
1 1/16–2	Detroit R7
1 1/16–3 1/16	BeaverFalls,Pa. R2
¾–1 1/16	Detroit P17

Cold-Finished (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
1 1/16–1	Aliquippa,Pa. K5
1 1/16–2	Hammond,Ind. M13
1 1/16–1 1/16	Sterling,Ill. C23
1 1/16–1⅝	Hartford,Conn. R2
1 1/16–2¼	Massillon,O. R2
1 1/16–2½	Newark,N.J. W18
1 1/16–3	Chicago W18
1 1/16–3¾	Ambridge,Pa. W18
1 1/16–4	Harvey,Ill. B5
1 1/16–2	Detroit B5
1 1/16–2	Mansfield,Mass. B5
1 1/16–4	Buffalo B5
1 1/16–1⅝	Gary,Ind. R2
1 1/16–2	Waukegan,Ill. A7
1 1/16–2	Elyria,O. W8
1 1/16–2 1/32	Cleveland A7
1 1/16–2 1/16	Cleveland C20
1 1/16–2½	SpringCity,Pa. K3
1 1/16–3	Camden,N.J. P13
1 1/16–3½	Youngstown F3
1 1/16–2	Youngstown Y1
1 1/16–2⅝	Plymouth,Mich. P5
1 1/16–3⅛	BeaverFalls,Pa. M12
⅝–1¾	Monaca,Pa. S17
⅝–2	Putnam,Conn. W18
⅝–2¼	Midland,Pa. C18
⅝–3⅛	Carnegie,Pa. C12
⅝–3½	Bethlehem,Pa. B2
1 1/16–3	Hammond,Ind. L2
1 1/16–2	Warren,O. C17
1 1/16–2	Detroit R7

Octagons

Hot-Rolled (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
1 1/16–1⅝	Tacony,Phila. D4
⅝–2	Bessemer,Ala. T2
½–⅝†	ChicagoHts.,Ill. C2
½–⅝†	Franklin,Pa. F5
½–1¼	Warren,O. C17
⅝–1	Knoxville,Tenn. K6
⅝–1⅛	Huntington,W.Va. W7

†Rail steel.

Hot-Rolled (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
1 1/16–1⅝	Tacony,Phila. D4
1 1/16–2½	Bethlehem,Pa. B2
½–1¼	Warren,O. C17
1 1/16	Lackawanna,N.Y. B2
Check with mill for sizes	Canton,O. R2

Cold-Finished (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
1 1/16–1	Aliquippa,Pa. K5
1 1/16–1 1/16	Warren,O. C17
1 1/16–1⅛	Detroit P17
Check with mill for sizes	Ambridge,Pa. W18
Check with mill for sizes	Chicago W18
Check with mill for sizes	Hammond,Ind. L2
Check with mill for sizes	Newark,N.J. W18
Check with mill for sizes	Putnam,Conn. W18
Check with mill for sizes	Youngstown F3

Cold-Finished (alloy)

Sizes Min.-Max. (inches)	Mill Point, Producer
1 1/16–1	Aliquippa,Pa. K5
1 1/16–2 1/16	Bethlehem,Pa. B2
1 1/16–1 1/16	Warren,O. C17
Check with mill for sizes	Ambridge,Pa. W18
Check with mill for sizes	Chicago W18
Check with mill for sizes	Hammond,Ind. L2
Check with mill for sizes	Newark,N.J. W18
Check with mill for sizes	Putnam,Conn. W18

Ovals, Sharp

Hot-Rolled (carbon)

Sizes Min.-Max. (inches)	Mill Point, Producer
½ x 1 1/16–1¼ x 1 1/16	Alton,Ill. L1
⅝ x ⅝	Huntington,W.Va. W7

Cold-Finished (carbon)

Check with mill for sizes	Check with mill for sizes
Aliquippa,Pa. K5	Newark,N.J. W18
Ambridge,Pa. W18	Putnam,Conn. W18
Chicago W18	Youngstown F3

Cold-Finished (alloy)

Check with mill for sizes	Check with mill for sizes
Aliquippa,Pa. K5	Newark,N.J. W18
Ambridge,Pa. W18	Putnam,Conn. W18
Chicago W18	Youngstown F3

BARS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Ovals, Blunt

Hot-Rolled (carbon)

Sizes (inches)	Mill Point, Producer
½ x 5/32–1 1/16 x 7/16	Alton,Ill. L1
½ x ¼	Atlanta A11
½ x ¼	Youngstown U5
5/8 x 7/16	Atlanta A11
5/8 x 7/16†	ChicagoHts.,Ill. C2
5/8 x 7/16†	Franklin,Pa. F5
5/8 x 7/16	Gary,Ind. U5
5/8 x 7/16	IndianaHarbor,Ind. I-2
5/8 x 7/16	Youngstown U5
5/8 x 7/16, 9/16, 7/16	So.Chicago,Ill. W14
5/8 x 7/16†	ChicagoHts.,Ill. C2
3/4 x 7/16†	Franklin,Pa. F5
3/4 x 7/16	Gary,Ind. U5
3/4 x 7/16	Youngstown U5
7/8 x 7/16, 9/16, 7/16	So.Chicago,Ill. W14
7/8 x 7/16†	ChicagoHts.,Ill. C2
7/8 x 7/16†	Franklin,Pa. F5
7/8 x 7/16	Gary,Ind. U5
7/8 x 7/16	IndianaHarbor,Ind. I-2
7/8 x 7/16	Youngstown U5
1 x 7/16, ½, 9/16	So.Chicago,Ill. W14

†Rail steel.

Sizes (inches)	Mill Point, Producer
5/8 x 7/16	Youngstown U5
3/4 x 7/16, 9/16, ½	So.Chicago,Ill. W14
3/4 x 9/16†	ChicagoHts.,Ill. C2
3/4 x 9/16†	Franklin,Pa. F5
7/8 x 9/16, 9/16, ½	So.Chicago,Ill. W14
7/8 x 9/16†	ChicagoHts.,Ill. C2
7/8 x 9/16†	Franklin,Pa. F5
7/8 x 9/16	Gary,Ind. U5
7/8 x 9/16	Youngstown U5
1 x 9/16, ½, 9/16	So.Chicago,Ill. W14
1 1/8 x 9/16†	ChicagoHts.,Ill. C2
1 1/8 x 9/16†	Franklin,Pa. F5
1.195 x .341	Tacony,Phila. D4
1 1/4 x ½	Youngstown U5
1 1/4 x 5/8	Atlanta A11
1 1/4 x 5/8	Bessemer,Ala. T2
1 1/4 x 9/16†	ChicagoHts.,Ill. C2
1 1/4 x 9/16†	Franklin,Pa. F5
1 1/4 x 9/16	Gary,Ind. U5
1 1/4 x 5/8	Youngstown U5
1.387 x .396	Tacony,Phila. D4
1 1/2 x 1/4	SouthChicago,Ill. W14

Sizes (inches)	Mill Point, Producer
7/8 x 1/8	Atlanta A11
.909 x .260	Tacony,Phila. D4
1 x 1/4	Atlanta A11
1 x 1/4	Bessemer,Ala. T2
1 x 1/4†	ChicagoHts.,Ill. C2
1 x 1/4†	Franklin,Pa. F5
1 x 1/4	Gary,Ind. U5
1 x 1/4	Youngstown U5
1.004 x .287	Tacony,Phila. D4
1 1/8 x 1/4	Atlanta A11
1 1/8 x 1/4†	ChicagoHts.,Ill. C2
1 1/8 x 1/4†	Franklin,Pa. F5
1.195 x .341	Tacony,Phila. D4
1 1/4 x 1/4	Youngstown U5
1 1/4 x 5/16	Atlanta A11
1 1/4 x 5/16	Bessemer,Ala. T2
1 1/4 x 5/16†	ChicagoHts.,Ill. C2
1 1/4 x 5/16†	Franklin,Pa. F5
1 1/4 x 5/16	Gary,Ind. U5
1 1/4 x 5/16	Youngstown U5
1.387 x .396	Tacony,Phila. D4
1 1/2 x 1/4	SouthChicago,Ill. W14

Sizes (inches)	Mill Point, Producer
1 1/2 x 5/16–3/8	Gary,Ind. U5
1 1/2 x 5/16–3/8	Youngstown U5
1 1/2 x 3/8	Atlanta A11
1 1/2 x 3/8	Bessemer,Ala. T2
1 1/2 x 3/8	S.SanFrancisco B3
1 23/32 x .451	Tacony,Phila. D4
1 3/4 x 11/32	IndianaHarbor,Ind. I-2
1 3/4 x 3/8	IndianaHarbor,Ind. I-2
1 3/4 x 3/8–7/16	Youngstown U5
1 3/4 x 7/16	Atlanta A11
1 3/4 x 7/16	Bessemer,Ala. T2
1 3/4 x 7/16	S.SanFrancisco B3
1.769 x .505	Tacony,Phila. D4
1.960 x .560	Tacony,Phila. D4
2 x 3/8†	ChicagoHts.,Ill. C2
2 x 3/8†	Franklin,Pa. F5
2 x 3/8–½	Youngstown U5
2 x ½	Atlanta A11
2 x ½	IndianaHarbor,Ind. I-2
2 1/4 x 1/4	SouthChicago,Ill. W14
2 1/2 x 5/8	Youngstown U5

†Rail steel.

Hot-Rolled (alloy)

Check with mill for sizes
Gary,Ind. U5
Youngstown U5

Hot-Rolled (high-strength)

Sizes (inches)	Mill Point, Producer
½ x 1/4	Atlanta A11
½ x 1/4	Youngstown U5
5/8 x 7/16	Atlanta A11
5/8 x 7/16	Gary,Ind. U5
5/8 x 7/16	Youngstown U5

Sizes (inches)	Mill Point, Producer
3/4 x 7/16	Gary,Ind. U5
3/4 x 7/16	Youngstown U5
3/4 x 5/8	Gary,Ind. U5
7/8 x 7/16	Gary,Ind. U5
7/8 x 7/16	Youngstown U5

Cold-Finished (carbon)

Check with mill for sizes
Aliquippa,Pa. K5
Ambridge,Pa. W18
Chicago W18

Check with mill for sizes
Newark,N.J. W18
Putnam,Conn. W18
Youngstown F3

Cold-Finished (alloy)

Aliquippa,Pa. K5
Ambridge,Pa. W18
Chicago W18

Newark,N.J. W18
Putnam,Conn. W18
Youngstown F3

Half Ovals

Hot-Rolled (carbon)

Sizes (inches)	Mill Point, Producer
.431 x .123	Tacony,Phila. D4
½ x 1/16	Atlanta A11
½ x 1/4 to 1 1/4 x 5/8	Alton,Ill. L1
.527 x .151	Tacony,Phila. D4
.622 x .178	Tacony,Phila. D4
5/8 x 7/16	Atlanta A11
5/8 x 7/16	Youngstown U5
.718 x .205	Tacony,Phila. D4

Sizes (inches)	Mill Point, Producer
3/4 x 7/16	Atlanta A11
3/4 x 7/16†	ChicagoHts.,Ill. C2
3/4 x 7/16†	Franklin,Pa. F5
3/4 x 7/16	Gary,Ind. U5
3/4 x 7/16	Youngstown U5
.813 x .232	Tacony,Phila. D4
7/8 x 7/16†	ChicagoHts.,Ill. C2
7/8 x 7/16†	Franklin,Pa. F5

Hot-Rolled (alloy)

.431 x .123	Tacony,Phila. D4
.527 x .151	Tacony,Phila. D4
.622 x .178	Tacony,Phila. D4
23/32 x .205	Tacony,Phila. D4
11/16 x .232	Tacony,Phila. D4
.909 x .260	Tacony,Phila. D4
1.004 x .287	Tacony,Phila. D4
1.195 x .341	Tacony,Phila. D4
1.387 x .396	Tacony,Phila. D4

1 23/32 x .451	Tacony,Phila. D4
1.769 x .505	Tacony,Phila. D4
1.960 x .560	Tacony,Phila. D4
Check with mill for sizes	Gary,Ind. U5
Check with mill for sizes	Youngstown U5

Hot-Rolled (high-strength)

1/16–5/8	Sterling,Ill. C23
½ x 1/4	Atlanta A11
5/8 x 7/16	Atlanta A11
5/8 x 7/16	Youngstown U5
3/4 x 7/16	Atlanta A11
3/4 x 7/16	Gary,Ind. U5
3/4 x 7/16	Youngstown U5
7/8 x 1/4	Atlanta A11
1 x 1/4	Atlanta A11
1 x 1/4	Bessemer,Ala. T2
1 x 1/4	Gary,Ind. U5
1 x 1/4	Youngstown U5
1 1/8 x 1/4	Atlanta A11
1 1/4 x 1/4	Youngstown U5
1 1/4 x 5/16	Atlanta A11
1 1/4 x 5/16	Bessemer,Ala. T2

1 1/4 x 5/16	Gary,Ind. U5
1 1/4 x 5/16	Youngstown U5
1 1/2 x 5/16–3/8	Gary,Ind. U5
1 1/2 x 5/16–3/8	Youngstown U5
1 1/2 x 3/8	Atlanta A11
1 1/2 x 3/8	Bessemer,Ala. T2
1 1/2 x 3/8	S.SanFrancisco B3
1 3/4 x 3/8–7/16	Youngstown U5
1 3/4 x 7/16	Atlanta A11
1 3/4 x 7/16	Bessemer,Ala. T2
1 3/4 x 7/16	S.SanFrancisco B3
2 x 3/8–½	Youngstown U5
2 x ½	Atlanta A11
2 1/2 x 5/8	Youngstown U5

Cold-Finished (carbon)

Check with mill for sizes
Aliquippa,Pa. K5
Ambridge,Pa. W18
Chicago W18

Check with mill for sizes
Newark,N.J. W18
Putnam,Conn. W18
Sterling,Ill. C23

Cold-Finished (alloy)

Aliquippa,Pa. K5
Ambridge,Pa. W18
Chicago W18

Newark,N.J. W18
Putnam,Conn. W18
Sterling,Ill. C23

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Angles, Equal, Fillet (carbon)

Sizes (inches)	Mill Point, Producer
1/16 x 1/16 x 1/16	Warren,O. V4
1/8 x 1/8 x 1/8	Alton,Ill. L1
1/8 x 1/8 x 1/8	Atlanta A11
1/8 x 1/8 x 1/8	JerseyCity,N.J. A17
1/8 x 1/8 x 1/8	Knoxville,Tenn. K6
1/8 x 1/8 x 1/8	S.SanFrancisco B3
1/8 x 1/8 x 1/8	Youngstown U5
3/16 x 3/16 x 3/16	JerseyCity,N.J. A17
3/16 x 3/16 x 1/8	S.SanFrancisco B3
3/16 x 3/16 x 1/8	Warren,O. V4
3/16 x 3/16 x 1/8	Youngstown U5
3/16 x 3/16 x 7/64 .120, 1/16, 3/64, 1/32, 1/64†	ChicagoHts.,Ill. C2
3/16 x 3/16 x 7/64 .120, 1/16, 3/64, 1/32, 1/64†	ChicagoHts.,Ill. I-2
3/16 x 3/16 x 7/64 .120, 1/16, 3/64, 1/32, 1/64†	Franklin,Pa. F5
3/16 x 3/16 x 7/64 .120, 1/16, 3/64, 1/32, 1/64 1/4†	Tonawanda,N.Y. B12
3/16 x 3/16 x 7/64 1/8	Birmingham C15
3/16 x 3/16 x 7/64 1/8	KansasCity,Mo. 85
3/16 x 3/16 x 7/64 1/8, 3/64, 1/32, 1/64	St.Louis M11
3/16 x 3/16 x 7/64 1/8, 3/64, 1/32, 1/64†	St.Louis M11
3/16 x 3/16 x 7/64–1/4 to 2 x 2 x 7/64–1/4	Avis,Pa. J8
3/16 x 3/16 x 7/64–1/4 to 2 x 2 x 7/64–1/4†	Avis,Pa. J8
3/16 x 3/16 x 7/64–7/16	Alton,Ill. L1
3/16 x 3/16 x 1/8	Atlanta A11
3/16 x 3/16 x 1/8	Bessemer,Ala. T2
3/16 x 3/16 x 1/8	Gary,Ind. U5
3/16 x 3/16 x 1/8	Ind.Harbor,Ind. I-2
3/16 x 3/16 x 1/8	JerseyCity,N.J. A17
3/16 x 3/16 x 1/8	Knoxville,Tenn. K6
3/16 x 3/16 x 1/8	Seattle B3
3/16 x 3/16 x 1/8	S.SanFrancisco B3
3/16 x 3/16 x 1/8	Torrance,Calif. C11
3/16 x 3/16 x 1/8	Warren,O. V4
3/16 x 3/16 x 1/8†	Williamsport,Pa. S19
3/16 x 3/16 x 1/8	Youngstown U5
3/16 x 3/16 x 1/8	Houston 85
3/16 x 3/16 x 1/8, 1/16	Struthers,O. Y1
3/16 x 3/16 x 1/8 to 2 x 2 x 1/4	Milton,Pa. M18
3/16 x 3/16 x 1/4– 2 1/4 x 2 1/2 x 1/2	Joliet,Ill. P22
3/16 x 3/16 x 3/16–3/8	Minnequa,Colo. C10
3/16 x 3/16 x 3/16 and over†	Williamsport,Pa. S19
3/16 x 3/16 x 3/16	Pittsburg,Calif. C11
3/16 x 3/16 x 3/32, 1/16	Struthers,O. Y1
3/16 x 3/16 x 3/32–1/8	Minnequa,Colo. C10
3/16 x 3/16 x 7/64 .120, 1/16, 3/64, 1/32	ChicagoHts.,Ill. C2
3/16 x 3/16 x 7/64 .120, 1/16, 3/64, 1/32	ChicagoHts.,Ill. I-2
3/16 x 3/16 x 7/64 .120, 1/16, 3/64, 1/32	Franklin,Pa. F5
3/16 x 3/16 x 7/64 1/16, 3/64	St.Louis M11
3/16 x 3/16 x 1/8	Atlanta A11
3/16 x 3/16 x 1/8	Bessemer,Ala. T2
3/16 x 3/16 x 1/8	Gary,Ind. U5
3/16 x 3/16 x 1/8	Ind.Harbor,Ind. I-2
3/16 x 3/16 x 1/8	JerseyCity,N.J. A17
3/16 x 3/16 x 1/8	Knoxville,Tenn. K6
3/16 x 3/16 x 1/8	Seattle B3
3/16 x 3/16 x 1/8	S.SanFrancisco B3
3/16 x 3/16 x 1/8†	Williamsport,Pa. S19
3/16 x 3/16 x 1/8	Youngstown U5
3/16 x 3/16 x 3/16 and over†	Williamsport,Pa. S19
1 x 1 x 7/64, 1/16, 3/64, 1/32†	St.Louis M11
1 x 1 x 1/8	Warren,O. V4
1 x 1 x 1/8–1/4	Minnequa,Colo. C10
1 x 1 x 7/64 .120, 1/16, 3/64, 1/32	ChicagoHts.,Ill. C2
1 x 1 x 7/64 .120, 1/16, 3/64, 1/32, 1/64†	ChicagoHts.,Ill. I-2
1 x 1 x 7/64 .120, 1/16, 3/64, 1/32	Franklin,Pa. F5
1 x 1 x 7/64 .120, 1/16, 3/64, 1/32, 1/64†	Tonawanda,N.Y. B12
1 x 1 x 7/64 1/16, 3/64, 1/32	St.Louis M11
1 x 1 x 7/64 1/16	Birmingham C15
1 x 1 x 7/64 1/16	Atlanta A11
1 x 1 x 7/64 1/16	Bessemer,Ala. T2
1 x 1 x 7/64 1/16	Gary,Ind. U5
1 x 1 x 7/64 1/16	Ind.Harbor,Ind. I-2
1 x 1 x 7/64 1/16	JerseyCity,N.J. A17
1 x 1 x 7/64 1/16	Knoxville,Tenn. K6
1 x 1 x 7/64 1/16	Seattle B3
1 x 1 x 7/64 1/16	S.SanFrancisco B3
1 x 1 x 7/64 1/16	Torrance,Calif. C11
1 x 1 x 7/64 1/16	Warren,O. V4
1 x 1 x 7/64 1/16	Williamsport,Pa. S19
1 x 1 x 7/64 1/16	Youngstown U5
1 x 1 x 7/64 1/16 and over†	Williamsport,Pa. S19
1 x 1– 1 1/2 x 1 1/2†	Medford,Mass. N13
1 1/16 x 1 1/16 x 1/16	Youngstown U5
1 1/16 x 1 1/16 x 1/16, 1/32	Ind.Harbor,Ind. I-2
1 1/16 x 1 1/16 x 7/64 .120, 1/16, 3/64, 1/32, 1/64†	ChicagoHts.,Ill. C2
1 1/16 x 1 1/16 x 7/64 .120, 1/16, 3/64, 1/32, 1/64†	ChicagoHts.,Ill. I-2
1 1/16 x 1 1/16 x 7/64 .120, 1/16, 3/64, 1/32, 1/64†	Franklin,Pa. F5
1 1/16 x 1 1/16 x 7/64 .120, 1/16, 3/64, 1/32, 1/64†	Tonawanda,N.Y. B12
1 1/16 x 1 1/16 x 7/64 1/16	Warren,O. V4
1 1/16 x 1 1/16 x 7/64 1/16, 3/64, 1/32	St.Louis M11
1 1/16 x 1 1/16 x 7/64 1/16, 3/64, 1/32, 1/64†	St.Louis M11
1 1/16 x 1 1/16 x 7/64 1/16, 3/64, 1/32	Birmingham C15
1 1/16 x 1 1/16 x 7/64 1/16, 1/8	Atlanta A11
1 1/16 x 1 1/16 x 7/64 1/16, 1/8	KansasCity,Mo. 85
1 1/16 x 1 1/16 x 7/64 1/16, 1/8	Seattle B3
1 1/16 x 1 1/16 x 7/64–1/8	Alton,Ill. L1
1 1/16 x 1 1/16 x 1/16 †	Williamsport,Pa. S19
1 1/16 x 1 1/16 x 1/16, 3/32	Bessemer,Ala. T2
1 1/16 x 1 1/16 x 1/16, 3/32	Bethlehem,Pa. B2
1 1/16 x 1 1/16 x 1/16, 3/32	Fairless,Pa. U5
1 1/16 x 1 1/16 x 1/16, 3/32	Gadsden,Ala. R2
1 1/16 x 1 1/16 x 1/16, 3/32, 1/16	Gary,Ind. U5
1 1/16 x 1 1/16 x 1/16, 3/32, 1/16	Houston 85
1 1/16 x 1 1/16 x 1/16, 3/32	IndianaHarbor,Ind. I-2
1 1/16 x 1 1/16 x 1/16, 3/32	JerseyCity,N.J. A17
1 1/16 x 1 1/16 x 1/16, 3/32	Pittsburg,Calif. C11
1 1/16 x 1 1/16 x 1/16, 3/32	Portland,Oreg. O4
1 1/16 x 1 1/16 x 1/16, 3/32	SouthSanFrancisco B3
1 1/16 x 1 1/16 x 1/16, 3/32	Tonawanda,N.Y. B12
1 1/16 x 1 1/16 x 1/16, 3/32	Torrance,Calif. C11
1 1/16 x 1 1/16 x 1/16, 3/32, 1/4	Youngstown U5
1 1/16 x 1 1/16 x 1/16, 3/32	Knoxville,Tenn. K6
1 1/16 x 1 1/16 x 1/16, 3/32	SouthChicago,Ill. W14
1 1/16 x 1 1/16 x 1/16, 3/32	Struthers,O. Y1
1 1/16 x 1 1/16 x 1/16–1/4	Minnequa,Colo. C10
1 1/16 x 1 1/16 x 1/16 and over†	Williamsport,Pa. S19
1 1/16 x 1 1/16 x 3/16 to 2 1/16 x 2 1/16 x 3/16	Sterling,Ill. N15
1 5/16 x 1 5/16 x 3/16, 1/32	Tonawanda,N.Y. B12
1 7/16 x 1 7/16 x 1/16	Warren,O. V4
1 1/2 x 1 1/2 x 7/64 .120, 1/16, 3/64, 1/32, 1/64	ChicagoHts.,Ill. C2
1 1/2 x 1 1/2 x 7/64 .120, 1/16, 3/64, 1/32, 1/64 1/4†	Franklin,Pa. F5
1 1/2 x 1 1/2 x 7/64 .120, 1/16, 3/64, 1/32, 1/64, 3/32†	ChicagoHts.,Ill. I-2
1 1/2 x 1 1/2 x 7/64 .120, 1/16, 3/64, 1/32, 1/64 1/4, 3/32†	Tonawanda,N.Y. B12
1 1/2 x 1 1/2 x 7/64 1/16	St.Louis M11
1 1/2 x 1 1/2 x 7/64 1/16, 3/64, 1/32, 1/64 1/4†	St.Louis M11
1 1/2 x 1 1/2 x 7/64 1/16, 3/64	Birmingham C15
1 1/2 x 1 1/2 x 7/64–1/8	Madison,Ill. L1
1 1/2 x 1 1/2 x 1/16	Warren,O. V4
1 1/2 x 1 1/2 x 1/16 †	Williamsport,Pa. S19
1 1/2 x 1 1/2 x 1/16, 3/32	Aliquippa,Pa. J5
1 1/2 x 1 1/2 x 1/16, 3/32	Atlanta A11
1 1/2 x 1 1/2 x 1/16, 3/32	Bessemer,Ala. T2
1 1/2 x 1 1/2 x 1/16, 3/32	Bethlehem,Pa. B2
1 1/2 x 1 1/2 x 1/16, 3/32	Fairless,Pa. U5
1 1/2 x 1 1/2 x 1/16, 3/32	Gary,Ind. U5
1 1/2 x 1 1/2 x 1/16, 3/32	Houston 85
1 1/2 x 1 1/2 x 1/16, 3/32	IndianaHarbor,Ind. I-2
1 1/2 x 1 1/2 x 1/16, 3/32	JerseyCity,N.J. A17
1 1/2 x 1 1/2 x 1/16, 3/32	KansasCity,Mo. 85
1 1/2 x 1 1/2 x 1/16, 3/32	Pittsburg,Calif. C11
1 1/2 x 1 1/2 x 1/16, 3/32	Seattle B3
1 1/2 x 1 1/2 x 1/16, 3/32	SouthSanFrancisco B3
1 1/2 x 1 1/2 x 1/16, 3/32	Tonawanda,N.Y. B12
1 1/2 x 1 1/2 x 1/16, 3/32	Torrance,Calif. C11
1 1/2 x 1 1/2 x 1/16, 3/32	Youngstown U5
1 1/2 x 1 1/2 x 1/16, 3/32	Gadsden,Ala. R2
1 1/2 x 1 1/2 x 1/16, 3/32	Knoxville,Tenn. K6
1 1/2 x 1 1/2 x 1/16, 3/32	Portland,Oreg. O4
1 1/2 x 1 1/2 x 1/16, 3/32	Niles,Calif. P1
1 1/2 x 1 1/2 x 1/16, 3/32	SouthChicago,Ill. W14
1 1/2 x 1 1/2 x 1/16–3/8	Minnequa,Colo. C10
1 1/2 x 1 1/2 x 1/16, 3/32	Struthers,O. Y1
1 1/2 x 1 1/2 x 1/16 and over†	Williamsport,Pa. S19
1 5/8 x 1 5/8 x 3/16, 1/32	Tonawanda,N.Y. B12
1 7/8 x 1 7/8 x 1/16	Warren,O. V4
2 1/16 x 1 1/16 x 3/16, 1/32	ChicagoHts.,Ill. C2
2 1/16 x 1 1/16 x 3/16, 1/32	Franklin,Pa. F5
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16†	ChicagoHts.,Ill. I-2
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16†	Tonawanda,N.Y. B12
2 1/16 x 1 1/16 x 3/16, 1/32	Warren,O. V4
2 1/16 x 1 1/16 x 3/16, 1/32	Williamsport,Pa. S19
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	St.Louis M11
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Aliquippa,Pa. J5
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Atlanta A11
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Bessemer,Ala. T2
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Bethlehem,Pa. B2
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Birmingham C15
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Fairless,Pa. U5
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Gary,Ind. U5
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Houston 85
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	IndianaHarbor,Ind. I-2
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	KansasCity,Mo. 85
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Knoxville,Tenn. K6
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Lackawanna,N.Y. B2
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	LosAngeles B3
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Niles,Calif. P1
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Pittsburg,Calif. C11
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Portland,Oreg. O4
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Seattle B3
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	SouthChicago,Ill. W14
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	SouthSanFrancisco B3
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16	Torrance,Calif. C11
2 1/16 x 1 1/16–1/2	Minnequa,Colo. C10
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16, 1/8	Clairton,Pa. U5
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16, 1/8	Fontana,Calif. K1
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16, 1/8	Gadsden,Ala. R2
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16, 1/8	Struthers,O. Y1
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16, 1/8	Phoenixville,Pa. P4
2 1/16 x 1 1/16 x 3/16, 1/32, 1/16 and over†	Williamsport,Pa. S19
2 1/16 x 1 1/16 x 3/16, 1/16, 1/8	IndianaHarbor,Ind. Y1
1 5/8 x 1 5/8 x 1/16, 3/32	Houston 85
1 5/8 x 1 5/8 x 1/16, 3/32	IndianaHarbor,Ind. I-2
1 5/8 x 1 5/8 x 1/16, 3/32	JerseyCity,N.J. A17
1 5/8 x 1 5/8 x 1/16, 3/32	KansasCity,Mo. 85
1 5/8 x 1 5/8 x 1/16, 3/32	LosAngeles B3
1 5/8 x 1 5/8 x 1/16, 3/32	Pittsburg,Calif. C11
1 5/8 x 1 5/8 x 1/16, 3/32	Seattle B3
1 5/8 x 1 5/8 x 1/16, 3/32	SouthSanFrancisco B3
1 5/8 x 1 5/8 x 1/16, 3/32	Torrance,Calif. C11
1 5/8 x 1 5/8 x 1/16, 3/32	Youngstown U5
1 5/8 x 1 5/8 x 1/16, 3/32	Gadsden,Ala. R2
1 5/8 x 1 5/8 x 1/16, 3/32	Knoxville,Tenn. K6
1 5/8 x 1 5/8 x 1/16, 3/32	Niles,Calif. P1
1 5/8 x 1 5/8 x 1/16, 3/32	SouthChicago,Ill. W14
1 5/8 x 1 5/8 x 1/16, 3/32	SouthSanFrancisco B3
1 5/8 x 1 5/8 x 1/16, 3/32	Torrance,Calif. C11
1 5/8 x 1 5/8 x 1/16, 3/32	Minnequa,Colo. C10
1 5/8 x 1 5/8 x 1/16, 3/32, 1/16	Clairton,Pa. U5
1 5/8 x 1 5/8 x 1/16, 3/32, 1/16	Fontana,Calif. K1
1 5/8 x 1 5/8 x 1/16, 3/32, 1/16	Gadsden,Ala. R2
1 5/8 x 1 5/8 x 1/16, 3/32, 1/16	Struthers,O. Y1
1 5/8 x 1 5/8 x 1/16, 3/32, 1/16	Phoenixville,Pa. P4
1 5/8 x 1 5/8 x 1/16, 3/32, 1/16 and over†	Williamsport,Pa. S19
1 5/8 x 1 5/8 x 1/16, 1/16, 1/8	IndianaHarbor,Ind. Y1

†Rail steel.

BAR-SIZE SHAPES

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Angles, Equal, Fillet (carbon)

Sizes (inches)	Mill Point, Producer
2⅛x2⅛x⅛, 3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, 11/16, ¾, 13/16, ⅞	ChicagoHts., Ill. C2
2⅛x2⅛x⅜, 7/16, ½, 9/16, ⅝, 11/16, ¾, 13/16, ⅞	ChicagoHts., Ill. I-2
2⅛x2⅛x⅜, 7/16, ½, 9/16, ⅝, 11/16, ¾, 13/16, ⅞ †	Franklin, Pa. F5
2⅛x2⅛x⅛, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Knoxville, Tenn. K6
2⅛x2⅛x⅛, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	SouthChicago, Ill. W14
2⅛x2⅛x⅛–½	Minnequa, Colo. C10
2⅛x2⅛x⅛, ¼	JerseyCity, N.J. A17
2½x2½x⅛	Warren, O. V4
2½x2½x⅛, 3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, 11/16, ¾, 13/16, ⅞	ChicagoHts., Ill. I-2
2½x2½x⅛, 3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, 11/16, ¾, 13/16, ⅞ †	St. Louis M11
2½x2½x⅛, 3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, 11/16, ¾, 13/16, ⅞ †	ChicagoHts., Ill. C2
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, 11/16, ¾, 13/16, ⅞ †	Franklin, Pa. F5
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, 11/16, ¾, 13/16, ⅞	SouthChicago, Ill. W14
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Knoxville, Tenn. K6
2½x2½x3/16–½	Minnequa, Colo. C10
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝ †	Tonawanda, N.Y. B12
2½x2½x3/16, ¼	JerseyCity, N.J. A17
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Birmingham C15
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Fairless, Pa. U5
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Houston S5
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	KansasCity, Mo. S5
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Niles, Calif. P1
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Pittsburg, Calif. C11
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Torrance, Calif. C11
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Phoenixville, Pa. P4
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Aliquippa, Pa. J5
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Bessemer, Ala. T2
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Bethlehem, Pa. B2
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Clairton, Pa. U5
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Fontana, Calif. K1
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Gadsden, Ala. R2
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Gary, Ind. U5
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	IndianaHarbor, Ind. I-2
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Lackawanna, N.Y. B2
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	LosAngeles B3
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Portland, Oreg. O4
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Seattle B3
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	SouthSanFrancisco B3
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝	Struthers, O. Y1
2½x2½x3/16, ¼, 5/16, ⅜, 7/16, ½ and over †	Williamsport, Pa. S19
2½x2½x¼, 5/16, ⅜, 7/16, ½	IndianaHarbor, Ind. Y1

†Rail steel.

Angles, Equal, Square Root (carbon)

Sizes (inches)	Mill Point, Producer
¼x¼x1/16	Warren, O. V4
½x½x.030, .040, 1/16, .083, ⅛	Warren, O. V4
1/16x1/16x1/16	Warren, O. V4
5/16x5/16x.050, .083, 3/16, ⅛	Warren, O. V4
5/16x5/16x1/16, .083, ⅛	Warren, O. V4
5/16x5/16x7/64, ⅛	Bessemer, Ala. T2
5/16x5/16x7/64, ⅛, 3/16	Knoxville, Tenn. K6
⅜x⅜x⅛	Atlanta A11
⅜x⅜x⅛	Huntington, W.Va. W7
⅜x⅜x.065, ⅛	Warren, O. V4
⅜x⅜x7/64, ⅛, 1/16	Knoxville, Tenn. K6
⅜x⅜x⅛	Atlanta A11
⅜x⅜x⅛	Huntington, W.Va. W7
1x1x1/16, .070, 3/64, ⅛	Warren, O. V4
1x1x7/64, .120, ⅛, 5/32, 3/16	Huntington, W.Va. W7
1x1x7/64, ⅛	Bessemer, Ala. T2
1x1x7/64, ⅛, 3/16	Knoxville, Tenn. K6
1x1x⅛	Atlanta A11
1x1x⅛	SouthSanFrancisco B3
1x1to1½x1½ †	Medford, Mass. N13
1¼x1¼x1/16	Warren, O. V4
1¼x1¼x.120, ⅛	Huntington, W.Va. W7
1¼x1¼x1/16	Warren, O. V4
1¼x1¼x⅛, 5/32, 3/16	Bessemer, Ala. T2
1¼x1¼x⅛, 5/32, 3/16	Knoxville, Tenn. K6
1¼x1¼x⅛, 5/32, 3/16	Huntington, W.Va. W7
1¼x1¼x⅛, 5/32	Atlanta A11
1½x1½x1/16, 1/32, 3/64, 1/16	Warren, O. V4
1½x1½x7/64, ⅛	Bessemer, Ala. T2
1½x1½x7/64, ⅛, 3/16	Knoxville, Tenn. K6
1½x1½x.120, ⅛, 5/32, ¼	Huntington, W.Va. W7
1½x1½x⅛, 5/32	Atlanta A11
2x2x1/16, 3/32, 1/16	Warren, O. V4
2x2x⅛	Atlanta A11
2 7/64x2 7/64x7/64	Warren, O. V4
2½x2½x7/64	Warren, O. V4
2½x2½x⅛, .220, .240	Huntington, W.Va. W7
2½x2½x⅛, .220, .240	Warren, O. V4

†Rail steel.

Angles, Unequal, Fillet (carbon)

Sizes (inches)	Mill Point, Producer
⅛x3/16x.035	Warren, O. V4
⅛x¼x.024, ⅛	Warren, O. V4
⅛x5/16x1/16, ⅛	Warren, O. V4
⅛x7/32x.035	Warren, O. V4
⅛x7/32x.035	Warren, O. V4
⅜x3/16x.050	Warren, O. V4
⅜x3/16x.050	Warren, O. V4
⅜x5/16x.050	Warren, O. V4
⅜x5/16x1/16, 3/32	Warren, O. V4
⅜x3/16x.030	Warren, O. V4
⅜x½x.120	Warren, O. V4
⅜x5/16x7/64, .120, ⅛, 1/16 †	Tonawanda, N.Y. B12
¼x5/16x⅛ †	Williamsport, Pa. S19
7/32x3/16x.120	Warren, O. V4
1x5/16x7/64, .120, ⅛, 1/16	ChicagoHts., Ill. C2
1x5/16x7/64, .120, ⅛, 1/16 †	Franklin, Pa. F5
1x5/16x7/64, .120, ⅛, 1/16 †	ChicagoHts., Ill. I-2
1x5/16x7/64, .120, ⅛, 1/16 †	Tonawanda, N.Y. B12
1x5/16x7/64, ⅛, 3/32	St. Louis M11
1x5/16x7/64–¼ to 2x1½x7/64–¼	Avis, Pa. J8
1x5/16x7/64–¼ to 2x1½x7/64–¼ †	Avis, Pa. J8
1x5/16x⅛	Alton, Ill. L1
1x5/16x⅛	Atlanta A11
1x5/16x⅛	Gary, Ind. U5
1x5/16x⅛	Huntington, W.Va. W7
1x5/16x⅛	IndianaHarbor, Ind. I-2
1x5/16x⅛	Warren, O. V4
1x5/16x⅛ †	Williamsport, Pa. S19
1x5/16x⅛	Youngstown U5
1x5/16x⅛ to 2½x2x5/16	Joliet, Ill. P22
1x5/16x1/8 and over †	Williamsport, Pa. S19
1x5/16x⅛	Huntington, W.Va. W7
1x5/16x⅛	Youngstown U5
1x3/16x.050	Warren, O. V4
1x3/16x⅛	Youngstown U5
1¼x5/16x.120	Warren, O. V4
1¼x1x⅛	Warren, O. V4
1 3/16x1x7/64, ⅛, 3/64 †	St. Louis M11
1¼x1x⅛	Atlanta A11
1¼x1x⅛	Youngstown U5
1¼x1x⅛, .153	Warren, O. V4
1 3/16x5/16x.060, 1/16	Warren, O. V4
1⅜x⅜x7/64	Huntington, W.Va. W7
1⅜x⅜x7/64, .120, 1/16, 5/64, 3/32, 7/64, ⅛, 9/64, 5/32, 11/64, 3/16, 13/64, ¼ †	ChicagoHts., Ill. C2
1⅜x⅜x7/64, .120, 1/16, 5/64, 3/32, 7/64, ⅛, 9/64, 5/32, 11/64, 3/16, 13/64, ¼ †	ChicagoHts., Ill. I-2
1⅜x⅜x7/64, .120, 1/16, 5/64, 3/32, 7/64, ⅛, 9/64, 5/32, 11/64, 3/16, 13/64, ¼ †	Franklin, Pa. F5
1⅜x⅜x7/64, ⅛, 3/32, 7/64	St. Louis M11
1⅜x⅜x7/64, .120, ⅛, 5/64, 3/32, 7/64, ⅛, 9/64, 5/32, 11/64, 3/16, 13/64, ¼ †	Tonawanda, N.Y. B12
1⅜x⅜x7/64, ⅛, 3/32	St. Louis M11
1⅜x⅜x⅛	Atlanta A11
1⅜x⅜x⅛	So. SanFrancisco B3
1⅜x⅜x⅛	Williamsport, Pa. S19
1⅜x⅜x⅛, 5/16	Gary, Ind. U5
1⅜x⅜x⅛, 5/16	IndianaHarbor, Ind. I-2
1⅜x⅜x⅛, 5/16	So. Chicago, Ill. W14
1⅜x⅜x⅛, 5/16	Youngstown U5
1⅜x⅜x⅛, 5/16 and over †	Williamsport, Pa. S19
1⅜x⅜x⅛, 5/16 and over †	Williamsport, Pa. S19
1⅜x⅜x⅛, 5/16 and over †	Williamsport, Pa. S19
1⅜x1⅛x7/64, .120, ⅛, 5/64, 3/32, 7/64, ⅛, 9/64, 5/32, 11/64, 3/16, 13/64, ¼ †	ChicagoHts., Ill. I-2
1⅜x1⅛x7/64, .120, ⅛, 5/64, 3/32, 7/64, ⅛, 9/64, 5/32, 11/64, 3/16, 13/64, ¼ †	Tonawanda, N.Y. B12
1⅜x1⅛x⅛, 5/32	Bethlehem, Pa. B2
1⅜x1⅛x⅛, 5/32, ¼	Gary, Ind. U5
1⅜x1⅛x⅛, 5/32	So. SanFrancisco B3
1⅜x1⅛x⅛, 5/32, ¼	Youngstown U5
1⅜x1⅛x⅛, 5/32	So. Chicago, Ill. W14
1⅜x1⅛x⅛, 5/32	Warren, O. V4
1⅜x1⅛x⅛, 5/32	Struthers, O. Y1

†Rail steel.

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Angles, Unequal, Fillet (carbon)

Sizes (inches)	Mill Point, Producer
1¾ x1 ⅛ x 7/64, .120, ⅛, 3/64, 3/32, 1/16, 1/16 †	....ChicagoHts., Ill. C2
1¾ x1 ⅛ x 7/64, .120, ⅛, 3/64, 3/32, 1/16, 1/16 †	.....Franklin, Pa. F5
1¾ x1 ⅛ x 7/64, .120, ⅛, 3/64, 3/32, 1/16, 1/16 †, 5/64 †	.ChicagoHts., Ill. I-2
1¾ x1 ⅛ x 7/64, .120, ⅛, 3/64, 3/32, 1/16, 1/16, 5/64 †	.Tonawanda, N.Y. B12
1¾ x1 ⅛ x ⅛, 1/16, ⅛, 1/16	.....So.Chicago, Ill. W14
1 4/4 x1 1/4 x 5/16	.....Warren, O. V4
1⅞ x1 ⅝ x 7/64, ⅛, 3/64, 1/16, ⅛	.....St.Louis M11
1⅞ x1 ⅛ x 7/64	.....Warren, O. V4
1 4/4 x1 1/4 x 5/16	.....Warren, O. V4
2x1x .120, ⅛, 3/64, 1/16, ⅛	.....ChicagoHts., Ill. C2
2x1x .120, ⅛, 3/64, 1/16, ⅛ †	.....Franklin, Pa. F5
2x1x ⅛ †	.....Williamsport, Pa. 819
2x1x 1/16 and over †	.....Williamsport, Pa. 819
2x1 ¼ x ⅛, 1/16, ⅛	.....Huntington, W.Va. W7
2x1 ¼ x ⅛, 1/16, ⅛	...Youngstown U5
2x1 ¼ x 1/16, ⅛	....Bethlehem, Pa. B2
2x1 ⅝ x 7/64, .120, ⅛, 3/64, 1/16, ⅛ †	..Tonawanda, N.Y. B12
2x1 ⅝ x 7/64, ⅛	.....Birmingham C15
2x1 ⅝ x 7/64, ⅛, 3/64, 1/16, ⅛ †	.....St.Louis M11
2x1 ⅝ x .120, ⅛, 3/64, 1/16, ⅛ †	.....ChicagoHts., Ill. C2
2x1 ⅝ x .120, ⅛, 3/64, 1/16, ⅛	.....Franklin, Pa. F5
2x1 ⅝ x .120, ⅛, 3/64, 1/16, ⅛, 1/16, ⅛, 5/64 †	.ChicagoHts., Ill. I-2
2x1 ⅝ x .120, 1/16	.....Huntington, W.Va. W7
2x1 ⅝ x ⅛ †	...Williamsport, Pa. 819
2x1 ⅝ x ⅛, 1/16	.....Knoxville, Tenn. K6
⅜ x 5/16 and over †	.....Williamsport, Pa. 819
2x1 ⅝ x 1/16	.....Williamsport, Pa. 819
2x1 ½	.....Medford, Mass. N13
2x1 ½ x .120, ⅛, 3/64, 1/16	.....ChicagoHts., Ill. C2
2x1 ½ x .120, ⅛, 3/64, 1/16	.....Franklin, Pa. F5
2x1 ½ x .120, ⅛, 3/64, 1/16, 1/16, ⅛, 5/64 †	.....ChicagoHts., Ill. I-2
2x1 ½ x .120, ⅛, 3/64, 1/16, 1/16, ⅛, 5/64 †	.....Tonawanda, N.Y. B12
2x1 ½ x ⅛	.....Warren, O. V4
2x1 ½ x ⅛ †	.....Williamsport, Pa. 819
¼ †	.....St.Louis M11
2x1 ½ x ⅛, 1/16, ⅛	..Aliquippa, Pa. J5
2x1 ½ x ⅛, 1/16, ⅛	.....Atlanta A11
2x1 ½ x ⅛, 1/16, ⅛	..Bessemer, Ala. T2
2x1 ½ x ⅛, 1/16, ⅛	..Bethlehem, Pa. B2
2x1 ½ x ⅛, 1/16, ⅛	..Birmingham C15
2x1 ½ x ⅛, 1/16, ⅛	..Gadsden, Ala. R2
2x1 ½ x ⅛, 1/16, ⅛	.....Gary, Ind. U5
2x1 ½ x ⅛, 1/16, ⅛ ¼	.....Huntington, W.Va. W7
2x1 ½ x ⅛, 1/16, ⅛, 1/16	.KansasCity, Mo. 85
2x1 ½ x ⅛, 1/16, ⅛	....LosAngeles B3
2x1 ½ x ⅛, 1/16, ⅛ ¼	.....Pittsburg, Calif. C11
2x1 ½ x ⅛, 1/16, ⅛	.....Seattle B3
2x1 ½ x ⅛, 1/16, ⅛ ¼	.....So.SanFrancisco B3
2x1 ½ x ⅛, 1/16, ⅛	...Struthers, O. Y1
2x1 ½ x ⅛, 1/16, ⅛ ¼	.....Torrance, Calif. C11
2x1 ½ x ⅛, 1/16, ⅛	...Youngstown U5
2x1 ½ x ⅛, 1/16, ⅛, 1/16	.....Knoxville, Tenn. K6
2x1 ½ x ⅛, 1/16, ⅛, 1/16, ⅝	.....So.Chicago, Ill. W14
2x1 ½ x ⅛, 1/16, ⅝	..Minnequa, Colo. C10
2x1 ½ x 1/16, ⅛	.....Houston 85
2x1 ½ x 1/16, ⅛	..Ind.Harbor, Ind. I-2
2x1 ½ x 1/16, ⅛	..Portland, Oreg. O4
2x1 ⅝ x 1/16 and over †	.....Williamsport, Pa. 819
2x1 ⅝	.....Medford, Mass. N13
2x1 ⅝ x .120, ⅛, 3/64, 1/16	.....ChicagoHts., Ill. C2
2x1 ⅝ x .120, ⅛, 3/64, 1/16	.....Franklin, Pa. F5
2x1 ⅝ x .120, ⅛, 3/64, 1/16, 1/16, ⅛, 5/64 †	.....ChicagoHts., Ill. I-2
2x1 ⅝ x .120, ⅛, 3/64, 1/16, 1/16, ⅛, 5/64 †	.....Tonawanda, N.Y. B12
2x1 ⅝ x ⅛	.....Warren, O. V4
2x1 ⅝ x ⅛ †	.....Williamsport, Pa. 819
¼ †	.....St.Louis M11
2x1 ⅝ x ⅛, 1/16, ⅛	..Aliquippa, Pa. J5
2x1 ⅝ x ⅛, 1/16, ⅛	.....Atlanta A11
2x1 ⅝ x ⅛, 1/16, ⅛	..Bessemer, Ala. T2
2x1 ⅝ x ⅛, 1/16, ⅛	..Bethlehem, Pa. B2
2x1 ⅝ x ⅛, 1/16, ⅛	..Birmingham C15
2x1 ⅝ x ⅛, 1/16, ⅛	..Gadsden, Ala. R2
2x1 ⅝ x ⅛, 1/16, ⅛	.....Gary, Ind. U5
2x1 ⅝ x ⅛, 1/16, ⅛ ¼	.....Huntington, W.Va. W7
2x1 ⅝ x ⅛, 1/16, ⅛, 1/16	.KansasCity, Mo. 85
2x1 ⅝ x ⅛, 1/16, ⅛	....LosAngeles B3
2x1 ⅝ x ⅛, 1/16, ⅛ ¼	.....Pittsburg, Calif. C11
2x1 ⅝ x ⅛, 1/16, ⅛	.....Seattle B3
2x1 ⅝ x ⅛, 1/16, ⅛ ¼	.....So.SanFrancisco B3
2x1 ⅝ x ⅛, 1/16, ⅛	...Struthers, O. Y1
2x1 ⅝ x ⅛, 1/16, ⅛ ¼	.....Torrance, Calif. C11
2x1 ⅝ x ⅛, 1/16, ⅛	...Youngstown U5
2x1 ⅝ x ⅛, 1/16, ⅛, 1/16	.....Knoxville, Tenn. K6
2x1 ⅝ x ⅛, 1/16, ⅛, 1/16, ⅝	.....So.Chicago, Ill. W14
2x1 ⅝ x ⅛, 1/16, ⅝	..Minnequa, Colo. C10
2x1 ⅝ x 1/16, ⅛	.....Houston 85
2x1 ⅝ x 1/16, ⅛	..Ind.Harbor, Ind. I-2
2x1 ⅝ x 1/16, ⅛	..Portland, Oreg. O4
2x1 ½ x 1/16, ⅛, 1/16	....Niles, Calif. P1
2x1 ½ x 1/16, ⅛, 1/16, ⅝	.....Fontana, Calif. K1
2x1 ½ x 1/16 and over †	.....Williamsport, Pa. 819
2x1 1/16 x 7/64	.....Warren, O. V4
2 1/16 x 1 1/16 x .050	.....Warren, O. V4
2 1/16 x 1 ½ x 1/16	.....Youngstown U5
2 1/16 x 1 ½ x 1/16, ⅛	...Aliquippa, Pa. J5
2 1/16 x 1 ¾ x 1/16	.....Warren, O. V4
2 1/16 x 1 ½ x 1/16, 1/16, ⅛, 5/64 †	....Tonawanda, N.Y. B12
2 1/16 x 1 ½ x 1/16	.....Huntington, W.Va. W7
2 1/16 x 1 ½ x 1/16, ⅛	.Pittsburg, Cal. C11
2 1/16 x 1 ½ x 1/16 – ⅛	.Minnequa, Colo. C10
2 1/16 x 1 ½ x 1/16, ⅛, 1/16	.Aliquippa, Pa. J5
2 1/16 x 1 ½ x 1/16, ⅛, 1/16	.Bethlehem, Pa. B2
2 1/16 x 1 ½ x 1/16, ⅛, 1/16	...Gary, Ind. U5
2 1/16 x 1 ½ x 1/16, ⅛, 1/16	..Fontana, Cal. K1
2 1/16 x 1 ½ x 1/16, ⅛, 1/16	..LosAngeles B3
2 1/16 x 1 ½ x 1/16, ⅛, 1/16	..Niles, Calif. P1
2 1/16 x 1 ½ x 1/16, ⅛, 1/16	.....Seattle B3
2 1/16 x 1 ½ x 1/16, ⅛, 1/16	.Struthers, O. Y1
2 1/16 x 1 ½ x 1/16, 1/16	.....Torrance, Calif. C11
2 1/16 x 1 ½ x 1/16, 1/16, ⅛	.Youngstown U5
2 1/16 x 2x 1/16 †	..Williamsport, Pa. 819
1/16, ⅛ †	.....St.Louis M11
2 1/16 x 2x 1/16, 3/64, 1/16, 1/16	.....ChicagoHts., Ill. C2
2 1/16 x 2x 1/16, 3/64, 1/16, 1/16	.....ChicagoHts., Ill. I-2
1/16, ⅛, 5/64 †	.....Franklin, Pa. F5
2 1/16 x 2x 1/16, 3/64, 1/16, 1/16	.Tonawanda, N.Y. B12
2 1/16 x 2x 1/16, 1/16	.....Warren, O. V4
2 1/16 x 2x 1/16, 1/16, 1/16	.....Knoxville, Tenn. K6
2 1/16 x 2x 1/16, 1/16	.Minnequa, Colo. C10
2 1/16 x 2x 1/16, 1/16	.....Birmingham C15
2 1/16 x 2x 1/16, 1/16	.....Huntington, W.Va. W7
2 1/16 x 2x 1/16, 1/16	Pittsburg, Cal. C11
2 1/16 x 2x 1/16, 1/16, 1/16	...Struthers, O. Y1
2 1/16 x 2x 1/16, 1/16, 1/16, ⅝	Aliquippa, Pa. J5
2 1/16 x 2x 1/16, 1/16, ⅝	.....Houston 85
2 1/16 x 2x 1/16, 1/16, ⅝	.IndianaHarbor, Ind. I-2
2 1/16 x 2x 1/16, 1/16, ⅝	.KansasCity, Mo. 85
2 1/16 x 2x 1/16, 1/16, ⅝	.Lackawanna, N.Y. B2
2 1/16 x 2x 1/16, 1/16, ⅝	.LosAngeles B3
2 1/16 x 2x 1/16, 1/16, ⅝	.Niles, Calif. P1
2 1/16 x 2x 1/16, 1/16, ⅝	.Portland, Oreg. O4
2 1/16 x 2x 1/16, 1/16, ⅝	.....Seattle B3
2 1/16 x 2x 1/16, 1/16, ⅝	.SouthChicago, Ill. W14
2 1/16 x 2x 1/16, 1/16, ⅝	.So.SanFrancisco B3
2 1/16 x 2x 1/16, 1/16, ⅝	.Torrance, Calif. C11
2 1/16 x 2x 1/16 and over †	.....Williamsport, Pa. 819
2 1/16 x 2x ⅝, ½	IndianaHarbor, Ind. Y1
2 1/16 x 2x ½, 1/16, ⅝, 1/16, 1/16	.....Phoenixville, Pa. P4
2⅜ x 1 4/4 x .050	.....Warren, O. V4
2⅜ x2 ¼ x 7/64	.....Warren, O. V4

† Rail steel.

Angles, Unequal, Square Root (carbon)

.345x .131x .050	.....Warren, O. V4
⅜ x 7/64 x .060	.....Warren, O. V4
⅜ x .131x .050	.....Warren, O. V4
⅜ x 1/16 x .049	.....Warren, O. V4
4/4 x 1/16 x 1/16	.....Warren, O. V4
½ x 7/64 x .060	.....Warren, O. V4
½ x ⅛ x .035	.....Warren, O. V4
½ x ¼ x .042	.....Warren, O. V4
½ x 1/16 x .050	.....Warren, O. V4
½ x 4/4 x .065, ⅛	.....Warren, O. V4
½ x ⅜ x .026, .042	...Warren, O. V4
½ x .417x .042	.....Warren, O. V4
½ x 1/16 x .083, ⅛	.....Warren, O. V4
4/4 x 2/4 x ⅛	.....Warren, O. V4
5/8 x ⅜ x 1/16, .070, 3/32	..Warren, O. V4
5/8 x 1/16 x 7/64, ⅛	.....Warren, O. V4
⅝ x ⅛ x .018, .083	...Warren, O. V4
.620x .525x .045	....Warren, O. V4
⅝ x 1/16 x .050, 3/32	.....Warren, O. V4
⅝ x ⅜ x 5/64	.....Warren, O. V4
⅝ x ½ x .075, ⅛	.....Warren, O. V4
4/4 x 2/4 x 5/64	.....Warren, O. V4
¾ x 1/16 x 7/64	.....Warren, O. V4
¾ x ⅜ x ⅛	.....Warren, O. V4
¾ x 7/64 x 3/32	.....Warren, O. V4
¾ x ½ x 1/16	.....Warren, O. V4
¾ x ⅜ x 1/16	.....Warren, O. V4
¾ x 2/4 x 1/16	.....Warren, O. V4
2/4 x 1/16 x .040	.....Warren, O. V4
2/4 x 1/16 x 1/16	.....Warren, O. V4
2/4 x 1/16 x 3/32	.....Warren, O. V4
2/4 x ⅜ x .065	.....Warren, O. V4
2/4 x 2/4 x 1/16	.....Warren, O. V4
2/4 x 1/16 x .050	.....Warren, O. V4
⅞ x 1/16 x .050	.....Warren, O. V4
⅞ x ½ x 1/16	.....Warren, O. V4
⅞ x ⅜ x 1/16	.....Warren, O. V4
2/4 x ⅜ x .048	.....Warren, O. V4
6/4 x ½ x 1/16	.....Warren, O. V4
6/4 x 2/4 x 1/16	.....Warren, O. V4
1x ½ x 1/16, .035, ⅛	....Warren, O. V4
1x ⅜ x 1/16, ⅛	.....Warren, O. V4
1x ¾ x .070, ⅛	.....Warren, O. V4
1x ⅝ x 1/16	.....Warren, O. V4
1 4/4 x .193x 3/32	.....Warren, O. V4
1 1/16 x ⅜ x 3/32	.....Warren, O. V4
1 2/8 x 2/4 x 3/32	.....Warren, O. V4
1 1/16 x1x 1/16	.....Warren, O. V4
1 1/16 x ⅜ x 1/16	.....Warren, O. V4
1 1/16 x ½ x 1/16	.....Warren, O. V4
1 1/16 x ⅝ x 1/16, ⅛	.....Warren, O. V4
1 ⅜ x 7/64 x 3/32	.....Warren, O. V4
1 ⅜ x ⅜ x 1/16	.....Warren, O. V4
1 4/4 x1 ⅛ x .120	.....Warren, O. V4
1 1/16 x ½ x .050, 1/16	.....Warren, O. V4
1 1/16 x1x .070, 5/64, ⅛	...Warren, O. V4
1 2/8 x ⅜ x 1/16	.....Warren, O. V4
1 ⅜ x1 1/16 x 1/16	.....Warren, O. V4
1 4/4 x1 1/16 x 3/32	.....Warren, O. V4
1 ⅜ x ⅜ x 7/64	.....Warren, O. V4
1 4/4 x1 1/4 x 5/16	.....Warren, O. V4
1 4/4 x1 4/4 x 5/16	.....Warren, O. V4
1 1/16 x1 1/16 x 1/16, 5/64	....Warren, O. V4
2x1x ⅛, 1/16	.....Youngstown U5
2x1 ¼ x ⅛, 1/16	.....Warren, O. V4
2x1 ⅜ x 7/64, 1/16, 1/16	.....Knoxville, Tenn. K6
2x1 1/16 †	.....Medford, Mass. N13
2x1 1/16 x 1/16, 1/16, 1/16	.....Warren, O. V4
2x1 1/16 x 7/64, 1/16, 1/16	.....Knoxville, Tenn. K6
2x1 1/16 x 1/16	.....Bessemer, Ala. T2
2 1/16 x ⅜ x 1/16	.....Warren, O. V4
2 1/16 x1x 1/16	.....Warren, O. V4
2 1/16 x1 ¼ x 3/32	.....Warren, O. V4
2 1/16 x1x 1/16	.....Warren, O. V4
2 1/16 x1x 1/16	.....Warren, O. V4
2 1/16 x1 1/16 x 1/16	.....Warren, O. V4
2 1/16 x1 1/16 x 3/32, 7/64, 1/16	...Warren, O. V4
2 1/16 x1 1/16 x 1/16	.....Warren, O. V4
2 ⅜ x2 1/16 x 7/64	.....Warren, O. V4
2 ⅜ x1 1/16 x 1/16	.....Warren, O. V4
2 ⅜ x ⅞ x 1/16	.....Warren, O. V4

†Rail steel.

Angles, Equal, Fillet (alloy)

Sizes (inches)	Mill Point, Producer
1/16 x 1/16 x 1/16	.....Youngstown U5
5/16 x 5/16 x 1/16	.....Youngstown U5
5/16 x 5/16 x 1/16	.....Gary, Ind. U5
5/16 x 5/16 x 1/16	.....Youngstown U5
5/16 x 5/16 x 1/16, 1/16	.....Houston 85
5/16 x 5/16 x 1/16	.....Gary, Ind. U5
5/16 x 5/16 x 1/16	.....Youngstown U5
1x1x 1/16, 1/16	.....Houston 85
1x1x 1/16, 1/16, 1/16	....Fairless, Pa. U5
1x1x 1/16, 1/16, 1/16	.....Gary, Ind. U5
1x1x 1/16, 1/16, 1/16	...Portland, Oreg. O4
1x1x 1/16, 1/16, 1/16	.....Youngstown U5
1 1/16 x1 1/16 x 1/16	.....Youngstown U5
1 1/16 x1 1/16 x 1/16, 1/16, 1/16	..Fairless, Pa. U5
1 1/16 x1 1/16 x 1/16, 1/16, 1/16	....Gary, Ind. U5
1 1/16 x1 1/16 x 1/16, 1/16, 1/16	.....Houston 85
1 1/16 x1 1/16 x 1/16, 1/16	.....Portland, Oreg. O4
1 1/16 x1 1/16 x 1/16, 1/16	.....Youngstown U5
1 1/16 x1 1/16 x 1/16, .035, 1/16	....Warren, O. V4
1 1/16 x1 1/16 x 1/16, 1/16	.....Warren, O. V4
1 1/16 x1 1/16 x 1/16, .070, 1/16	.....Warren, O. V4
1 1/16 x1 ⅛ x 1/16, 1/16	.....Youngstown U5
1 1/16 x1 ⅛ x 1/16, 1/16	.....Aliquippa, Pa. J5
1 1/16 x1 ⅛ x 1/16, 1/16	.....Fairless, Pa. U5
1 1/16 x1 ⅛ x 1/16, 1/16	.....Gary, Ind. U5
1 1/16 x1 ⅛ x 1/16, 1/16	.....Houston 85
1 1/16 x1 ⅛ x 1/16, 1/16	.....Youngstown U5
1 1/16 x1 ⅛ x 1/16, 1/16, 1/16	.....Portland, Oreg. O4
1 1/16 x1 ⅜ x 1/16, 1/16	.....Aliquippa, Pa. J5
1 1/16 x1 ⅜ x 1/16, 1/16	.....Fairless, Pa. U5
1 1/16 x1 ⅜ x 1/16, 1/16	.....Gary, Ind. U5
1 1/16 x1 ⅜ x 1/16, 1/16	.....Houston 85
1 1/16 x1 ⅜ x 1/16, 1/16	.....Youngstown U5
1 1/16 x1 ⅜ x 1/16, 1/16	.....Portland, Oreg. O4
1 1/16 x1 ⅜ x 1/16, 1/16, 1/16	.....Aliquippa, Pa. J5
1 1/16 x1 ⅜ x 1/16, 1/16, 1/16	.....Fairless, Pa. U5
1 1/16 x1 ⅜ x 1/16, 1/16, 1/16	.....Gary, Ind. U5
1 1/16 x1 ⅜ x 1/16, 1/16, 1/16	.....Houston 85
1 1/16 x1 ⅜ x 1/16, 1/16, 1/16	.....Portland, Oreg. O4
2x2x 1/16, 1/16	.....Youngstown U5
2x2x 1/16, 1/16, 1/16	.....Aliquippa, Pa. J5
2x2x 1/16, 1/16, 1/16, 1/16	.....Fairless, Pa. U5
2x2x 1/16, 1/16, 1/16, 1/16	.....Gary, Ind. U5
2x2x 1/16, 1/16, 1/16, 1/16	.....Houston 85
2x2x 1/16, 1/16, 1/16, 1/16	.....Portland, Oreg. O4
2x2x 1/16, 1/16, 1/16, 1/16	.....Clairton, Pa. U5
2x2x 1/16, 1/16, 1/16, 1/16	.....Fontana, Calif. K1
2 1/16 x2 1/16 x 1/16, 1/16, 1/16	.....Fairless, Pa. U5
2 1/16 x2 1/16 x 1/16, 1/16, 1/16	.....Houston 85
2 1/16 x2 1/16 x 1/16, 1/16, 1/16	.....Aliquippa, Pa. J5
2 1/16 x2 1/16 x 1/16, 1/16, 1/16	.....Clairton, Pa. U5
2 1/16 x2 1/16 x 1/16, 1/16, 1/16	.....Fontana, Calif. K1
2 1/16 x2 1/16 x 1/16, 1/16, 1/16	.....Gary, Ind. U5
2 1/16 x2 1/16 x 1/16, 1/16, 1/16, 1/16	...Portland, Oreg. O4

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Angles, Unequal, Fillet (alloy)

Sizes (inches)	Mill Point, Producer
1x⅝x⅛	Gary,Ind. U5
1x⅝x⅛	Youngstown U5
1x⅝x⅛	Youngstown U5
1⅛x1x⅛	Youngstown U5
1⅛x1⅛x⅛,$\frac{5}{16}$	Gary,Ind. U5
1⅛x⅞x⅛,$\frac{5}{16}$	Youngstown U5
1⅛x⅝x⅛	Youngstown U5
1⅛x1⅛x⅛	Youngstown U5
1⅝x1⅛x⅛,$\frac{5}{16}$,¼	Gary,Ind. U5
1⅝x1¼x⅛, $\frac{5}{16}$,¼	Youngstown U5
2x1⅛x⅛,$\frac{5}{16}$,⅛	Youngstown U5
2x1½x¼, $\frac{5}{16}$,⅝	Aliquippa,Pa. J5
2x1½x⅛,$\frac{5}{16}$,⅛	Gary,Ind. U5
2x1½x⅛,$\frac{5}{16}$,⅛	Youngstown U5
2x1½x$\frac{5}{16}$,¼	Houston S5
2x1½x$\frac{5}{16}$,¼	Portland,Oreg. O4
2x1½x$\frac{5}{16}$,⅛, $\frac{5}{16}$,⅝	Fontana,Calif. K1
2⅛x1½x$\frac{5}{16}$	Youngstown U5
2⅛x1½x$\frac{5}{16}$,⅛	Aliquippa,Pa. J5
2½x1½x⅛, ⅛,$\frac{5}{16}$	Aliquippa,Pa. J5
2½x1½x$\frac{5}{16}$	Fontana,Calif. K1
¼,$\frac{5}{16}$	Gary,Ind. U5
2½x1½x$\frac{5}{16}$, ¼,$\frac{5}{16}$	Fontana,Calif. K1
¼,$\frac{5}{16}$	Gary,Ind. U5
2½x1½x$\frac{5}{16}$, ¼,$\frac{5}{16}$	Youngstown U5
2½x2x$\frac{5}{16}$,¼	Aliquippa,Pa. J5
$\frac{5}{16}$,⅝	Clairton,Pa. U5
2½x2x$\frac{5}{16}$,¼	Fontana,Calif. K1
$\frac{5}{16}$,⅝	Gary,Ind. U5
2½x2x$\frac{5}{16}$,¼	Houston S5
2½x2x$\frac{5}{16}$,¼	Portland,Oreg. O4
$\frac{5}{16}$,⅝	

Angles, Unequal, Square Root (alloy)

Sizes (inches)	Mill Point, Producer
2x1x⅛,$\frac{5}{16}$	Youngstown U5

Angles, Equal, Fillet (high-strength)

Sizes (inches)	Mill Point, Producer
½x½x⅛	Atlanta A11
½x½x⅛	S.SanFrancisco B3
½x½x⅛	Youngstown U5
⅝x⅝x⅛	S.SanFrancisco B3
⅝x⅝x⅛	Youngstown U5
¾x¾x⅛	Atlanta A11
¾x¾x⅛	Bessemer,Ala. T2
¾x¾x⅛	Gary,Ind. U5
¾x¾x⅛	Seattle B3
¾x¾x⅛	S.SanFrancisco B3
¾x¾x⅛	Youngstown U5
¾x¾x⅛,$\frac{5}{16}$	Houston S5
¾x¾x⅛,$\frac{5}{16}$	Struthers,O. Y1
⅞x⅞x$\frac{7}{16}$,⅛,$\frac{5}{16}$	Struthers,O. Y1
⅞x⅞x⅛	Atlanta A11
⅞x⅞x⅛	Bessemer,Ala. T2
⅞x⅞x⅛	Gary,Ind. U5
⅞x⅞x⅛	Seattle B3
⅞x⅞x⅛	S.SanFrancisco B3
⅞x⅞x⅛	Youngstown U5
1x1x$\frac{7}{64}$,⅛,$\frac{5}{16}$,¼	Atlanta A11
1x1x$\frac{7}{64}$,⅛,$\frac{5}{16}$,⅛	Seattle B3
1x1x$\frac{7}{64}$,⅛,$\frac{5}{16}$,¼	S.SanFrancisco B3
1x1x¼,$\frac{5}{16}$	Houston S5
1x1x⅛,$\frac{5}{16}$,¼	Bessemer,Ala. T2
1x1x⅛,$\frac{5}{16}$,⅛	Fairless,Pa. U5
1x1x⅛,$\frac{5}{16}$,¼	Gary,Ind. U5
1x1x⅛,$\frac{5}{16}$,¼	Struthers,O. Y1
1x1x⅛,$\frac{5}{16}$,¼	Youngstown U5
1⅛x1⅛x⅛	Youngstown U5
1⅛x1⅛x$\frac{7}{64}$,⅛, $\frac{5}{16}$,⅛	Atlanta A11
1¼x1¼x$\frac{7}{64}$,⅛, $\frac{5}{16}$,¼	Seattle B3
1¼x1¼x¼,$\frac{5}{16}$	Bessemer,Ala. T2
1¼x1¼x¼,$\frac{5}{16}$,⅛	Fairless,Pa. U5
1¼x1¼x¼,$\frac{5}{16}$,¼	Gary,Ind. U5
1¼x1¼x¼,$\frac{5}{16}$,¼	Houston S5
1¼x1¼x¼,$\frac{5}{16}$,¼	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,⅛	Fairless,Pa. U5
1¼x1¼x⅜,$\frac{5}{16}$,¼	Gary,Ind. U5
1¼x1¼x⅜,$\frac{5}{16}$,¼	Houston S5
1¼x1¼x⅜,$\frac{5}{16}$,¼	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,⅜	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,½	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,⅝	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,¾	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,⅞	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,1	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,1⅛	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,1¼	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,1⅜	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,1½	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,1⅝	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,1¾	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,1⅞	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,2	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,2¼	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,2½	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,2¾	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,3	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,3½	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,4	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,4½	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,5	Seattle B3
1¼x1¼x⅜,$\frac{5}{16}$,5½	Seattle B3

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Channels (carbon)

Sizes (inches)	Mill Point, Producer
.180x.575x.050	Warren,O. V4
.199x⅝x.037	Warren,O. V4
.323x½x$\frac{1}{32}$	Warren,O. V4
⅜x$\frac{3}{16}$x.042	Warren,O. V4
⅜x¼x.050,$\frac{1}{16}$	Warren,O. V4
⅜x⅜x.050,$\frac{1}{16}$	Warren,O. V4
.392x.352x.040	Warren,O. V4
$\frac{13}{32}$x⅜x.025	Warren,O. V4
$\frac{13}{32}$x$\frac{13}{32}$x$\frac{1}{32}$	Warren,O. V4
.430x.822x$\frac{3}{64}$	Warren,O. V4
.435x.160x.035	Warren,O. V4
$\frac{7}{16}$x¼x$\frac{1}{16}$	Warren,O. V4
$\frac{7}{16}$x⅜x.035	Warren,O. V4
½x¾x$\frac{3}{64}$	Warren,O. V4
½x½x.050,$\frac{1}{16}$,$\frac{3}{32}$	Warren,O. V4
½x⅜x.083	Warren,O. V4
.542x½x.030	Warren,O. V4
$\frac{7}{16}$x⅜x.025	Warren,O. V4
$\frac{7}{16}$x⅜x.035	Warren,O. V4
.605x$\frac{7}{16}$x.050	Warren,O. V4
$\frac{21}{32}$x$\frac{7}{16}$x$\frac{1}{16}$	Warren,O. V4
$\frac{21}{32}$x⅝x$\frac{1}{16}$	Warren,O. V4
$\frac{21}{32}$x1x$\frac{1}{16}$	Warren,O. V4
⅝x$\frac{3}{16}$x.050	Warren,O. V4
⅝x¼x$\frac{1}{16}$	Warren,O. V4
⅝x$\frac{7}{16}$x$\frac{1}{16}$	Warren,O. V4
⅝x$\frac{7}{16}$x$\frac{1}{16}$	Warren,O. V4
⅝x⅝x.035	Warren,O. V4
$\frac{11}{16}$x⅝x.049	Warren,O. V4
¾x¼x.050,$\frac{1}{16}$	Warren,O. V4
¾x$\frac{3}{16}$x$\frac{3}{32}$†	Chicago Hts.,Ill. C2
¾x$\frac{3}{16}$x$\frac{3}{32}$†	Franklin,Pa. F5
¾x$\frac{3}{16}$x.095†	Tonawanda,N.Y. B12
¾x$\frac{3}{16}$x.050,.120	Warren,O. V4
¾x$\frac{3}{16}$x$\frac{3}{64}$†	Chicago Hts.,Ill. C2
¾x$\frac{3}{16}$x$\frac{3}{64}$†	Franklin,Pa. F5
¾x$\frac{7}{16}$x.095,$\frac{3}{64}$†	Tonawanda,N.Y. B12
¾x$\frac{7}{16}$x⅛	Atlanta A11
¾x$\frac{7}{16}$x⅛	Youngstown U5
¾x$\frac{7}{16}$x⅛ to 2½x⅝x$\frac{5}{16}$	Joliet,Ill. P22
¾x⅝x.050,.062	Warren,O. V4
¾x⅝x.072	Torrance,Calif. C11
¾x⅝x.072,⅛	Youngstown U5
¾x⅝x.083	Warren,O. V4
¾x⅝x.120	Warren,O. V4
¾x⅞x⅛	Atlanta A11
¾x⅞x⅛	Gary,Ind. U5
¾x⅞x⅛	S.San Francisco B3
¾x⅞x⅛†	Tonawanda,N.Y. B12
¾x⅞x$\frac{1}{16}$,$\frac{3}{64}$	Warren,O. V4
¾x1x.120	Warren,O. V4
.775x⅞x$\frac{3}{64}$	Warren,O. V4
$\frac{13}{16}$x⅝x.035	Warren,O. V4
.850x1x.050	Warren,O. V4
⅞x⅝x$\frac{3}{16}$,⅛	Warren,O. V4
⅞x⅝x⅛	Atlanta A11
⅞x⅝x⅛	Gary,Ind. U5
⅞x⅝x⅛	Youngstown U5
⅞x$\frac{7}{16}$x.049,.085,⅛	Warren,O. V4
⅞x$\frac{7}{16}$x⅛	Atlanta A11
⅞x$\frac{7}{16}$x⅛	S.San Francisco B3
⅞x$\frac{7}{16}$x⅛	Youngstown U5
⅞x⅝x$\frac{3}{64}$	Warren,O. V4
⅞x¾x$\frac{3}{16}$	Warren,O. V4
$\frac{27}{32}$x$\frac{7}{16}$x$\frac{3}{64}$	Warren,O. V4
$\frac{15}{16}$x½x.050	Warren,O. V4
$\frac{15}{16}$x$\frac{13}{32}$x.037	Warren,O. V4
1x¼x.050	Warren,O. V4
1x$\frac{1}{16}$x.095†	Tonawanda,N.Y. B12
1x⅝x$\frac{3}{64}$†	Chicago Hts.,Ill. C2
1x⅝x$\frac{3}{64}$†	Franklin,Pa. F5
1x⅝x.095,.109,⅛†	Tonawanda,N.Y. B12
1x⅝x⅛	Alton,Ill. L1
1x⅝x⅛†	Chicago Hts.,Ill. C2
1x⅝x⅛†	Franklin,Pa. F5
1x⅝x⅛	Gary,Ind. U5
1x⅝x⅛	Huntington,W.Va. W7
1x⅝x⅛	Warren,O. V4
1x⅝x⅛	Youngstown U5
1x$\frac{7}{16}$x.120	Warren,O. V4
1x½x.035,$\frac{1}{16}$,.120	Warren,O. V4
1x½x⅛	Alton,Ill. L1
1x½x⅛	Atlanta A11
1x½x⅛†	Chicago Hts.,Ill. C2
1x½x⅛†	Franklin,Pa. F5
1x½x⅛	Gary,Ind. U5
1x½x⅛	Huntington,W.Va. W7
1x½x⅛	Knoxville,Tenn. K6
1x½x⅛	S.Chicago,Ill. W14
1x½x⅛	S.San Francisco B3
1x½x⅛	Youngstown U5
1x¾x$\frac{7}{16}$,$\frac{3}{64}$	Warren,O. V4
1x1x$\frac{1}{16}$	Warren,O. V4
1x1¼x¼	Warren,O. V4
1x1½x$\frac{3}{32}$	Warren,O. V4
1$\frac{1}{16}$x1$\frac{3}{32}$x.040	Warren,O. V4
1$\frac{1}{16}$x⅝x.035	Warren,O. V4
1$\frac{1}{16}$x$\frac{3}{16}$x.035	Warren,O. V4
1$\frac{1}{16}$x¼x.035	Warren,O. V4
1$\frac{1}{16}$x½x$\frac{1}{16}$	Warren,O. V4
1$\frac{1}{16}$x1⅛x$\frac{1}{16}$	Warren,O. V4
1$\frac{1}{16}$x1$\frac{21}{32}$x$\frac{3}{64}$	Warren,O. V4
1$\frac{7}{64}$x1$\frac{1}{32}$x.035	Warren,O. V4
1⅛x¼x.035	Warren,O. V4
1⅛x⅝x⅛	Kansas City,Mo. S5
1⅛x$\frac{7}{16}$x⅛†	Tonawanda,N.Y. B12
1⅛x$\frac{7}{16}$x$\frac{1}{16}$	Youngstown U5
1.150x¼x.035	Warren,O. V4
1.150x⅝x.050	Warren,O. V4
1.1755x2x⅛	Warren,O. V4
1.180x1.180x.083	Warren,O. V4
1.180x1½x.065,$\frac{3}{64}$	Warren,O. V4
1$\frac{3}{16}$x$\frac{7}{16}$x$\frac{7}{64}$	Warren,O. V4
1$\frac{3}{16}$x⅝x⅛	Warren,O. V4
1$\frac{3}{16}$x1$\frac{3}{16}$x$\frac{3}{64}$	Warren,O. V4
1$\frac{3}{16}$x1$\frac{1}{16}$x$\frac{1}{16}$	Warren,O. V4
1$\frac{3}{16}$x⅝x.095	Warren,O. V4
1$\frac{13}{64}$x$\frac{29}{64}$x$\frac{5}{64}$	Warren,O. V4
1¼x$\frac{7}{16}$x$\frac{7}{16}$	Warren,O. V4
1¼x½x.064	Warren,O. V4
1¼x½x⅛	Atlanta A11
1¼x½x⅛	Gary,Ind. U5
1¼x½x¼	Kansas City,Mo. S5
1¼x½x¼	S.Chicago,Ill. W14
1¼x½x¼	S.San Francisco B3
1¼x½x¼	Youngstown U5
1¼x½x¼, $\frac{7}{16}$	Huntington,W.Va. W7
1¼x$\frac{7}{16}$x$\frac{7}{16}$†	Tonawanda,N.Y. B12
1¼x$\frac{7}{16}$x$\frac{7}{16}$	Warren,O. V4
1¼x$\frac{7}{16}$x$\frac{7}{16}$	S.Chicago,Ill. W14
1¼x1½x$\frac{7}{16}$	Knoxville,Tenn. K6
1.278x⅝x.036	Warren,O. V4
1$\frac{11}{16}$x1$\frac{11}{16}$x$\frac{5}{16}$	Warren,O. V4
1$\frac{7}{8}$x¾x.051	Warren,O. V4
1⅝x$\frac{7}{16}$x$\frac{7}{16}$†	Chicago Hts.,Ill. C2
1⅝x$\frac{7}{16}$x$\frac{7}{16}$†	Franklin,Pa. F5
1⅝x½x$\frac{7}{16}$	Warren,O. V4
1⅝x⅝x$\frac{7}{16}$	Warren,O. V4
1⅝x1¼x$\frac{7}{16}$,$\frac{7}{64}$	Warren,O. V4
1$\frac{13}{16}$x⅝x$\frac{5}{16}$	Warren,O. V4
1$\frac{13}{16}$x$\frac{13}{16}$x$\frac{1}{16}$†	Tonawanda,N.Y. B12
1$\frac{13}{16}$x$\frac{13}{16}$x$\frac{5}{16}$	Warren,O. V4
1$\frac{13}{16}$x⅝x$\frac{5}{16}$	Warren,O. V4
1$\frac{13}{16}$x⅝x$\frac{5}{16}$	Youngstown U5

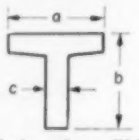
BAR-SIZE SHAPES

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Channels (high-strength)

Sizes (inches)	Mill Point, Producer
⅜ x ⅛ x ⅛	Atlanta A11
⅜ x ⅜ x ⅛	Atlanta A11
⅜ x ⅜ x ⅛	Gary,Ind. U5
⅜ x ⅜ x ⅛	SouthSanFrancisco B3
⅜ x ⅜ x ⅛	Atlanta A11
⅜ x ⅜ x ⅛	Gary,Ind. U5
⅜ x ⅞ x ⅛	Atlanta A11
⅜ x ⅞ x ⅛	SouthSanFrancisco B3
1x ⅜ x ⅛	Gary,Ind. U5
1x ½ x ⅛	Atlanta A11
1x ½ x ⅛	Gary,Ind. U5
1x ½ x ⅛	SouthSanFrancisco B3
1 ⅛ x ½ x ⅛	Atlanta A11
1 ⅛ x ½ x ⅛	Gary,Ind. U5
1 ½ x ½ x ⅛	Atlanta A11
1 ½ x ½ x ⅛	Gary,Ind. U5
1 ½ x ½ x ⅛	SouthSanFrancisco B3
1 ½ x ⅞ x ⅛	Atlanta A11
1 ½ x ⅞ x ⅛	Gary,Ind. U5
1 ½ x ⅞ x ⅛	Atlanta A11
1 ½ x 1 x ⅛	Gary,Ind. U5
1 ½ x 1 x ⅛	SouthSanFrancisco B3
½ x ⅞ x ⅛	SouthSanFrancisco B3
1 ½ x ⅝ x ⅛	Gary,Ind. U5
1 ½ x ⅝ x ⅛	SouthSanFrancisco B3
1 ½ x 1 ½ x ⅛	Gary,Ind. U5
1 ½ x 1 ½ x ⅛	Atlanta A11
1 ½ x 1 ½ x ⅛	SouthSanFrancisco B3
2x ½ x ⅛	Atlanta A11
2x ⅞ x ⅛	Atlanta A11
2x ⅞ x ⅛	Gary,Ind. U5
2x ⅞ x ¼	Atlanta A11
2x ⅝ x ⅛	Gary,Ind. U5
2x 1 x ⅛	Atlanta A11
2x 1 ⅛ x ⅛	Atlanta A11
2 ½ x 1 ½ x ⅛	Atlanta A11
2 ½ x ⅝ x ⅛	Atlanta A11
Check with mill for sizes	Youngstown U5

Tees



All sizes given aXbXc

Equal (alloy)

⅝ x ⅝ x 1/16	Gary,Ind. U5
⅝ x ⅝ x 1/16	Youngstown U5
⅞ x ⅞ x ⅛	Youngstown U5
1x1x 1/16	Gary,Ind. U5
1x1x 1/16, 3/64	Youngstown U5
1 1/16 x 1 1/16 x 1/16, 3/64, 1/16	Youngstown U5
1 1/16 x 1 1/16 x 3/64	Gary,Ind. U5
1 1/16 x 1 1/16 x 1/16, 1/16	Gary,Ind. U5
1 1/16 x 1 1/16 x 1/16, 1/16	Youngstown U5
1 5/16 x 1 5/16 x 1/16, 1/16	Gary,Ind. U5
1 5/16 x 1 5/16 x 1/16, 1/16	Youngstown U5
2x2x 1/16, 3/64	Gary,Ind. U5
2x2x 1/16, 3/64	Youngstown U5
2 1/16 x 2 1/16 x 1/16	Gary,Ind. U5
2 1/16 x 2 1/16 x 1/16	Youngstown U5
2 1/16 x 2 1/16 x 1/16, 3/64, 1/16	Youngstown U5
2 1/16 x 2 1/16 x 1/16, 3/64, 1/16	Gary,Ind. U5
Check with mill for sizes	Ecorse,Mich. G5

Unequal (alloy)

⅝ x 7/16 x 7/64	Gary,Ind. U5
1 ⅝ x 2.074 x .140	Youngstown U5
2x1.312x.109	Youngstown U5
2x1 ½ x .128	Youngstown U5
2x1 ½ x ⅛	Gary,Ind. U5
2x1 ⅝ x .128	Youngstown U5
2 ½ x 1 ½ x 3/64	Youngstown U5
Check with mill for sizes	Ecorse,Mich. G5

Equal (high-strength)

⅝ x ⅝ x 1/16	Atlanta A11
⅝ x ⅝ x 1/16	Gary,Ind. U5
⅝ x ⅝ x 1/16	Youngstown U5
⅞ x ⅞ x 1/16	Youngstown U5
1x1x 1/16	Atlanta A11
1x1x 1/16	Gary,Ind. U5
1x1x 1/16	SouthSanFrancisco B3
1x1x 1/16, 3/64	Youngstown U5
1 1/16 x 1 1/16 x 1/16, 3/64	Atlanta A11
1 1/16 x 1 1/16 x 1/16, 3/64, 1/16	Youngstown U5
1 1/16 x 1 1/16 x 3/64	Gary,Ind. U5
1 1/16 x 1 1/16 x 3/64	SouthSanFrancisco B3
1 1/16 x 1 1/16 x 3/64	SouthSanFrancisco B3
1 1/16 x 1 1/16 x 1/16, 1/16	Atlanta A11
1 1/16 x 1 1/16 x 1/16, 1/16	Gary,Ind. U5
1 1/16 x 1 1/16 x 1/16, 1/16	Youngstown U5
1 5/16 x 1 5/16 x 1/16, 1/16	Gary,Ind. U5
1 5/16 x 1 5/16 x 1/16, 1/16	Youngstown U5
2x2x 1/16	Atlanta A11
2x2x 1/16	SouthSanFrancisco B3
2x2x 1/16, 3/64	Gary,Ind. U5
2x2x 1/16, 3/64	Youngstown U5
2 1/16 x 2 1/16 x 1/16	Gary,Ind. U5
2 1/16 x 2 1/16 x 1/16	Youngstown U5
2 1/16 x 2 1/16 x 1/16, 3/64	SouthSanFrancisco B3
2 1/16 x 2 1/16 x 1/16, 3/64, 1/16	Youngstown U5
2 1/16 x 2 1/16 x 1/16, 3/64	Gary,Ind. U5

Unequal (high-strength)

⅝ x 7/16 x 7/64	Gary,Ind. U5
2x1 1/16 x 1/16	Gary,Ind. U5
2 1/16 x 1 7/16 x 3/64	SouthSanFrancisco B3
Check with mill for sizes	Youngstown U5

Equal (carbon)

⅜ x ⅜ x 1/16	Atlanta A11
⅜ x ⅜ x 1/16	Gary,Ind. U5
⅜ x ⅜ x 1/16	Youngstown U5
⅜ x ⅜ x 1/16 to 2 1/16 x 2 1/16 x ⅜	Joliet,Ill. P22
⅞ x ⅞ x 1/16	Youngstown U5
1x1x 1/16	Atlanta A11
1x1x 1/16†	ChicagoHts.,Ill. C2
1x1x 1/16†	Franklin,Pa. F5
1x1x 1/16	Gary,Ind. U5
1x1x 1/16	Huntington,W.Va. W7
1x1x 1/16	SouthSanFrancisco B3
1x1x 1/16, 3/64, 1/16†	Tonawanda,N.Y. B12
1x1x 1/16, 3/64, 1/16	Youngstown U5
1 1/16 x 1 1/16 x 1/16	Huntington,W.Va. W7
1 1/16 x 1 1/16 x 1/16, 3/64	Atlanta A11
1 1/16 x 1 1/16 x 1/16, 3/64, 1/16	Youngstown U5
1 1/16 x 1 1/16 x 3/64	Gary,Ind. U5
1 1/16 x 1 1/16 x 3/64	SouthSanFrancisco B3
1 5/16 x 1 5/16 x 1/16†	St.Louis M11
1 5/16 x 1 5/16 x 3/64†	ChicagoHts.,Ill. I-2
1 1/16 x 1 1/16 x 1/16†	ChicagoHts.,Ill. C2
1 1/16 x 1 1/16 x 1/16†	Franklin,Pa. F5
1 1/16 x 1 1/16 x 1/16†	St.Louis M11
1 1/16 x 1 1/16 x 1/16, 1/16†	ChicagoHts.,Ill. I-2
1 1/16 x 1 1/16 x 1/16, 1/16	Huntington,W.Va. W7
1 1/16 x 1 1/16 x 1/16, 1/16†	Tonawanda,N.Y. B12
1 1/16 x 1 1/16 x 3/64	SouthSanFranciscoB3
1 1/16 x 1 1/16 x 1/16, 3/64	Atlanta A11
1 1/16 x 1 1/16 x 1/16, 3/64	Gary,Ind. U5
1 1/16 x 1 1/16 x 1/16, 3/64	Youngstown U5
1 1/16 x 1 1/16 x 1/16†	ChicagoHts.,Ill. I-2
1 1/16 x 1 1/16 x 3/64, 1/16	Gary,Ind. U5
1 1/16 x 1 1/16 x 3/64, 1/16	Youngstown U5
2x2x 1/16	Atlanta A11
2x2x 1/16	SouthSanFrancisco B3
2x2x 1/16, 3/64	Gary,Ind. U5
2x2x 1/16, 3/64	Youngstown U5
2 1/16 x 2 1/16 x 1/16	Gary,Ind. U5
2 1/16 x 2 1/16 x 1/16	Youngstown U5
2 1/16 x 2 1/16 x 1/16, 3/64	SouthSanFrancisco B3
2 1/16 x 2 1/16 x 1/16, 3/64, 1/16	Youngstown U5
2 1/16 x 2 1/16 x 1/16, 3/64	Gary,Ind. U5
Check with mill for sizes	Ecorse,Mich. G5

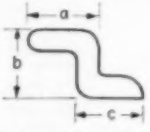
†Rail steel.

Unequal (carbon)

⅝ x 7/16 x 7/64	Gary,Ind. U5
1 1/16 x 1 1/16 x 1/16†	ChicagoHts.,Ill. I-2
1 1/16 x 1 1/16 x 1/16†	ChicagoHts.,Ill. I-2
1 ⅝ x 2.074 x .140	Youngstown U5
2x1.312x.109	Youngstown U5
2x1 ½ x .128	Youngstown U5
2x1 ½ x ⅛	Gary,Ind. U5
2x1 ⅝ x .128	Youngstown U5
2 ½ x 1 ½ x 3/64	Youngstown U5
2 ½ x 1 ½ x 7/64	SouthSanFrancisco B3
Check with mill for sizes	Ecorse,Mich. G5

†Rail steel.

Zees



All sizes given aXbXc

Carbon

1 1/16 x 1 3/16 x 1 ½	Youngstown U5
1 1/16 x 1 ⅝ x 1 ⅝	Youngstown U5
1 ⅝ x 1 11/16 x 2	SouthChicago,Ill. W14
1 ⅝ x 1 ⅝ x 1 ⅝	Gary,Ind. U5
2x1 ½ x 1 ½†	ChicagoHts.,Ill. C2
2 ½ x 1 ⅝ x 2 ¼	SouthChicago,Ill. W14

†Rail steel.

Alloy

1 1/16 x 1 3/16 x 1 ½	Youngstown U5
1 1/16 x 1 ⅝ x 1 ⅝	Youngstown U5
1 ⅝ x 1 ⅝ x 1 ⅝	Gary,Ind. U5

High-strength

1 ⅝ x 1 ⅝ x 1 ⅝	Gary,Ind. U5
Check with mill for sizes	Youngstown U5

Special Sections

Hot-Rolled (carbon)

Aliquippa,Pa. J5
Atlanta A11
Bessemer,Ala. T2
Buffalo R2
ChicagoHts.,Ill.† C2
ChicagoHts.,Ill.† I-2
Cleveland R2
Corry,Pa. M14
Fairfield,Ala. T2
Fontana,Calif. K1
Franklin,Pa.† F5
Gadsden,Ala. R2
Gary,Ind. U5
Huntington,W.Va. W7
IndianaHarbor,Ind. I-2
IndianaHarbor,Ind. Y1
Johnstown,Pa. B2
Knoxville,Tenn. K6
Lackawanna,N.Y. B2
LosAngeles B3
Minnequa,Colo. C10
Pittsburgh J5
Richmond,Va. T10
St.Louis M11
Seattle B3
SouthChicago,Ill. R2
SouthChicago,Ill. W14
SouthSanFrancisco B3
Struthers,O. Y1
Tacony,Philadelphia D4
Tonawanda,N.Y.† B12
Warren,O. V4
Williamsport,Pa.† S19
Youngstown R2
Youngstown U5

†Rail steel.

Hot-Rolled (alloy)

BeaverFalls,Pa. B1
Bethlehem,Pa. B2
Buffalo R2
Canton,O. R2
Corry,Pa. M14
Ecorse,Mich. G5
Gary,Ind. U5
IndianaHarbor,Ind. Y1
Johnstown,Pa. B2
Lackawanna,N.Y. B2
SouthChicago,Ill. R2
Struthers,O. Y1
Tacony,Philadelphia D4
Youngstown U5

Hot-Rolled (high-strength)

Atlanta A11
Bessemer,Ala. T2
Corry,Pa. M14
Ecorse,Mich. G5
Fontana,Calif. K1
Gary,Ind. U5
IndianaHarbor,Ind. Y1
LosAngeles B3
Seattle B3
SouthSanFrancisco B3
Sterling,Ill. C23
Struthers,O. Y1
Youngstown U5

Cold-Finished (carbon)

Aliquippa,Pa. K5
Ambridge,Pa. W18
BeaverFalls,Pa. R2
Buffalo B5
Chicago W18
Detroit B5
Detroit P17
Elyria,O. W8
Hammond,Ind. L2
Hammond,Ind. M13
Harvey,Ill. B5
LosAngeles S30
Mansfield,Mass. B5
Massillon,O. R2
Massillon,O. R8
Monaca,Pa. S17
Newark,N.J. W18
Pittsburgh J5
Plymouth,Mich. P5
Putnam,Conn. W18
SpringCity,Pa. K3
Sterling,Ill. C23
Youngstown F3
Youngstown Y1

Cold-Finished (alloy)

Aliquippa,Pa. K5
Ambridge,Pa. W18
Buffalo B5
Camden,N.J. P13
Chicago W18
Detroit B5
Elyria,O. W8
Hammond,Ind. L2
Hammond,Ind. M13
Harvey,Ill. B5
Mansfield,Mass. B5
Massillon,O. R2
Massillon,O. R8
Monaca,Pa. S17
Newark,N.J. W18
Plymouth,Mich. P5
Putnam,Conn. W18
SpringCity,Pa. K3
Youngstown F3
Youngstown Y1

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Deformed Reinforcing Bars (carbon)

Size No.	Mill Point, Producer
3‡	Atlanta A11
3	Avis,Pa. J8
3†	Avis,Pa. J8
3	Buffalo R2
3†	ChicagoHts.,Ill. C2
3†	ChicagoHts.,Ill. I-2
3	Cleveland R2
3	Emeryville,Calif. J7
3	Fairfield,Ala. T2
3†	Franklin,Pa. F5
3	Gadsden,Ala. R2
3	Gary,Ind. U5
3	Houston 85
3	Huntington,W.Va. W7
3†	Huntington,W.Va. W7
3	IndianaHarbor,Ind. I-2
3	IndianaHarbor,Ind. Y1
3	JerseyCity,N.J. A17
3	Johnstown,Pa. B2
3	Joliet,Ill. P22
3	KansasCity,Mo. 85
3	Knoxville,Tenn. K6
3	Lackawanna,N.Y. B2
3	LosAngeles B3
3	Madison,Ill. L1
3†	Medford,Mass. N13
3	Milton,Pa. M18
3	Minnequa,Colo. C10
3	Niles,Calif. P1
3	Pittsburg,Calif. C11
3	Pittsburgh J5
3	Portland,Oreg. O4
3	Richmond,Va. T10
3	St.Louis M11
3†	St.Louis M11
3	SandSprings,Okla. 85
3	Seattle B3
3	SouthChicago,Ill. R2
3	SouthSanFrancisco B3
3	SparrowsPoint,Md. B2
3	Sterling,Ill. N15
3	Struthers,O. Y1
3†	Tonawanda,N.Y. B12
3	Torrance,Calif. C11
3†	Williamsport,Pa. 819
3	Youngstown U5
4‡	Atlanta A11
4	Avis,Pa. J8
4†	Avis,Pa. J8
4	Buffalo R2
4†	ChicagoHts.,Ill. C2
4†	ChicagoHts.,Ill. I-2
4	Cleveland R2
4	Duquesne,Pa. U5
4	Emeryville,Calif. J7
4	Fairfield,Ala. T2
4	Fairless,Pa. U5
4	Fontana,Calif. K1
4†	Franklin,Pa. F5
4	Gadsden,Ala. R2
4	Gary,Ind. U5
4	Houston 85
4	Huntington,W.Va. W7
4†	Huntington,W.Va. W7
4	IndianaHarbor,Ind. I-2
4	IndianaHarbor,Ind. Y1
4	JerseyCity,N.J. A17
4	Johnstown,Pa. B2
4	Joliet,Ill. P22
4	KansasCity,Mo. 85
4	Knoxville,Tenn. K6
4	Lackawanna,N.Y. B2
4	LosAngeles B3
4	Madison,Ill. L1
4†	Medford,Mass. N13
4	Milton,Pa. M18
4	Minnequa,Colo. C10
4	Niles,Calif. P1
4	Pittsburg,Calif. C11
4	Pittsburgh J5
4	Portland,Oreg. O4
4	Richmond,Va. T10
4	St.Louis M11
4†	St.Louis M11
4	SandSprings,Okla. 85
4	Seattle B3
4	SouthChicago,Ill. R2
4	SouthSanFrancisco B3
4	SparrowsPoint,Md. B2
4	Sterling,Ill. N15
4	Struthers,O. Y1
4†	Tonawanda,N.Y. B12
4	Torrance,Calif. C11
4†	Williamsport,Pa. 819
4	Youngstown U5
5‡	Atlanta A11
5	Avis,Pa. J8
5†	Avis,Pa. J8
5	Buffalo R2
5†	ChicagoHts.,Ill. C2
5†	ChicagoHts.,Ill. I-2
5	Cleveland R2
5	Duquesne,Pa. U5
5	Emeryville,Calif. J7
5	Fairfield,Ala. T2
5	Fairless,Pa. U5
5	Fontana,Calif. K1
5†	Franklin,Pa. F5
5	Gadsden,Ala. R2
5	Gary,Ind. U5
5	Houston 85
5	Huntington,W.Va. W7
5†	Huntington,W.Va. W7
5	IndianaHarbor,Ind. I-2
5	IndianaHarbor,Ind. Y1
5	JerseyCity,N.J. A17
5	Johnstown,Pa. B2
5	Joliet,Ill. P22
5	KansasCity,Mo. 85
5	Knoxville,Tenn. K6
5	Lackawanna,N.Y. B2
5	LosAngeles B3
5	Madison,Ill. L1
5†	Medford,Mass. N13
5	Milton,Pa. M18
5	Minnequa,Colo. C10
5	Niles,Calif. P1
5	Pittsburg,Calif. C11
5	Pittsburgh J5
5	Portland,Oreg. O4
5	Richmond,Va. T10
5	St.Louis M11
5†	St.Louis M11
5	SandSprings,Okla. 85
5	Seattle B3
5	SouthChicago,Ill. R2
5	SouthSanFrancisco B3
5	SparrowsPoint,Md. B2
5	Sterling,Ill. N15
5	Struthers,O. Y1
5†	Tonawanda,N.Y. B12
5	Torrance,Calif. C11
5†	Williamsport,Pa. 819
5	Youngstown U5
6‡	Atlanta A11
6	Avis,Pa. J8
6†	Avis,Pa. J8
6	Buffalo R2
6†	ChicagoHts.,Ill. C2
6†	ChicagoHts.,Ill. I-2
6	Cleveland R2
6	Duquesne,Pa. U5
6	Emeryville,Calif. J7
6	Fairfield,Ala. T2
6	Fairless,Pa. U5
6	Fontana,Calif. K1
6†	Franklin,Pa. F5
6	Gadsden,Ala. R2
6	Gary,Ind. U5
6	Houston 85
6	Huntington,W.Va. W7
6†	Huntington,W.Va. W7
6	IndianaHarbor,Ind. I-2
6	IndianaHarbor,Ind. Y1
6	JerseyCity,N.J. A17
6	Johnstown,Pa. B2
6	Joliet,Ill. P22
6	KansasCity,Mo. 85
6	Knoxville,Tenn. K6
6	Lackawanna,N.Y. B2
6	LosAngeles B3
6	Madison,Ill. L1
6†	Medford,Mass. N13
6	Milton,Pa. M18
6	Minnequa,Colo. C10
6	Niles,Calif. P1
6	Pittsburg,Calif. C11
6	Pittsburgh J5
6	Portland,Oreg. O4
6	Richmond,Va. T10
6	St.Louis M11
6†	St.Louis M11
6	SandSprings,Okla. 85
6	Seattle B3
6	SouthChicago,Ill. R2
6	SouthSanFrancisco B3
6	SparrowsPoint,Md. B2
6	Sterling,Ill. N15
6	Struthers,O. Y1
6†	Tonawanda,N.Y. B12
6	Torrance,Calif. C11
6†	Williamsport,Pa. 819
6	Youngstown R2
6	Youngstown U5
7‡	Atlanta A11
7	Avis,Pa. J8
7†	Avis,Pa. J8
7	Buffalo R2
7†	ChicagoHts.,Ill. C2
7†	ChicagoHts.,Ill. I-2
7	Cleveland R2
7	Duquesne,Pa. U5
7	Emeryville,Calif. J7
7	Fairfield,Ala. T2
7	Fairless,Pa. U5
7	Fontana,Calif. K1
7†	Franklin,Pa. F5
7	Gadsden,Ala. R2
7	Gary,Ind. U5
7	Houston 85
7	Huntington,W.Va. W7
7†	Huntington,W.Va. W7
7	IndianaHarbor,Ind. I-2
7	IndianaHarbor,Ind. Y1
7	JerseyCity,N.J. A17
7	Johnstown,Pa. B2
7	Joliet,Ill. P22
7	KansasCity,Mo. 85
7	Knoxville,Tenn. K6
7	Lackawanna,N.Y. B2
7	LosAngeles B3
7	Madison,Ill. L1
7†	Medford,Mass. N13
7	Milton,Pa. M18
7	Minnequa,Colo. C10
7	Niles,Calif. P1
7	Pittsburg,Calif. C11
7	Pittsburgh J5
7	Portland,Oreg. O4
7	Richmond,Va. T10
7	St.Louis M11
7†	St.Louis M11
7	SandSprings,Okla. 85
7	Seattle B3
7	SouthChicago,Ill. R2
7	SouthSanFrancisco B3
7	SparrowsPoint,Md. B2
7	Sterling,Ill. N15
7	Struthers,O. Y1
7†	Tonawanda,N.Y. B12
7	Torrance,Calif. C11
7†	Williamsport,Pa. 819
7	Youngstown R2
7	Youngstown U5
8‡	Atlanta A11
8	Avis,Pa. J8
8†	Avis,Pa. J8
8	Buffalo R2
8†	ChicagoHts.,Ill. C2
8†	ChicagoHts.,Ill. I-2
8	Cleveland R2
8	Duquesne,Pa. U5
8	Emeryville,Calif. J7
8	Fairfield,Ala. T2
8	Fairless,Pa. U5
8	Fontana,Calif. K1
8†	Franklin,Pa. F5
8	Gadsden,Ala. R2
8	Gary,Ind. U5
8	Houston 85
8	Huntington,W.Va. W7
8†	Huntington,W.Va. W7
8	IndianaHarbor,Ind. I-2
8	IndianaHarbor,Ind. Y1
8	JerseyCity,N.J. A17
8	Johnstown,Pa. B2
8	Joliet,Ill. P22
8	KansasCity,Mo. 85
8	Knoxville,Tenn. K6
8	Lackawanna,N.Y. B2
8	LosAngeles B3
8	Madison,Ill. L1
8†	Medford,Mass. N13
8	Milton,Pa. M18
8	Minnequa,Colo. C10
8	Niles,Calif. P1
8	Pittsburg,Calif. C11
8	Pittsburgh J5
8	Portland,Oreg. O4
8	Richmond,Va. T10
8	St.Louis M11
8†	St.Louis M11
8	SandSprings,Okla. 85
8	Seattle B3
8	SouthChicago,Ill. R2
8	SouthSanFrancisco B3
8	SparrowsPoint,Md. B2
8	Sterling,Ill. N15
8	Struthers,O. Y1
8†	Tonawanda,N.Y. B12
8	Torrance,Calif. C11
8†	Williamsport,Pa. 819
8	Youngstown R2
8	Youngstown U5
9‡	Atlanta A11
9	Avis,Pa. J8
9†	Avis,Pa. J8
9	Buffalo R2
9†	ChicagoHts.,Ill. C2
9†	ChicagoHts.,Ill. I-2
9	Cleveland R2
9	Duquesne,Pa. U5
9	Emeryville,Calif. J7
9	Fairfield,Ala. T2
9	Fairless,Pa. U5
9	Fontana,Calif. K1
9†	Franklin,Pa. F5
9	Gadsden,Ala. R2
9	Gary,Ind. U5
9	Houston 85
9	Huntington,W.Va. W7
9†	Huntington,W.Va. W7
9	IndianaHarbor,Ind. I-2
9	IndianaHarbor,Ind. Y1
9	JerseyCity,N.J. A17
9	Johnstown,Pa. B2
9	Joliet,Ill. P22
9	KansasCity,Mo. 85
9	Knoxville,Tenn. K6
9	Lackawanna,N.Y. B2
9	LosAngeles B3
9	Madison,Ill. L1
9†	Medford,Mass. N13
9	Milton,Pa. M18
9	Minnequa,Colo. C10
9	Niles,Calif. P1
9	Pittsburg,Calif. C11
9	Pittsburgh J5
9	Portland,Oreg. O4
9	St.Louis M11
9†	St.Louis M11
9	SandSprings,Okla. 85
9	Seattle B3
9	SouthChicago,Ill. R2
9	SouthSanFrancisco B3
9	SparrowsPoint,Md. B2
9	Sterling,Ill. N15
9	Struthers,O. Y1
9†	Tonawanda,N.Y. B12
9	Torrance,Calif. C11
9†	Williamsport,Pa. 819
9	Youngstown R2
9	Youngstown U5
10‡	Atlanta A11
10	Avis,Pa. J8
10†	Avis,Pa. J8
10	Buffalo R2
10†	ChicagoHts.,Ill. C2
10†	ChicagoHts.,Ill. I-2
10	Cleveland R2
10	Duquesne,Pa. U5
10	Emeryville,Calif. J7
10	Fairfield,Ala. T2
10	Fairless,Pa. U5
10	Fontana,Calif. K1
10†	Franklin,Pa. F5
10	Gadsden,Ala. R2
10	Gary,Ind. U5
10	Houston 85
10	Huntington,W.Va. W7
10†	Huntington,W.Va. W7
10	IndianaHarbor,Ind. I-2
10	IndianaHarbor,Ind. Y1
10	JerseyCity,N.J. A17
10	Johnstown,Pa. B2
10	Joliet,Ill. P22
10	KansasCity,Mo. 85
10	Knoxville,Tenn. K6
10	Lackawanna,N.Y. B2
10	LosAngeles B3
10	Madison,Ill. L1
10†	Medford,Mass. N13
10	Milton,Pa. M18
10	Minnequa,Colo. C10
10	Niles,Calif. P1
10	Pittsburg,Calif. C11
10	Pittsburgh J5
10	Portland,Oreg. O4
10	St.Louis M11
10†	St.Louis M11
10	SandSprings,Okla. 85
10	Seattle B3
10	SouthChicago,Ill. R2
10	SouthSanFrancisco B3
10	Sterling,Ill. N15
10	Struthers,O. Y1
10†	Tonawanda,N.Y. B12
10	Torrance,Calif. C11
10†	Williamsport,Pa. 819
10	Youngstown R2
10	Youngstown U5
11‡	Atlanta A11
11	Avis,Pa. J8
11†	Avis,Pa. J8
11	Buffalo R2
11†	ChicagoHts.,Ill. C2
11†	ChicagoHts.,Ill. I-2
11	Cleveland R2
11	Duquesne,Pa. U5
11	Emeryville,Calif. J7
11	Fairfield,Ala. T2
11	Fairless,Pa. U5
11	Fontana,Calif. K1
11†	Franklin,Pa. F5
11	Gadsden,Ala. R2
11	Gary,Ind. U5
11	Houston 85
11	Huntington,W.Va. W7
11†	Huntington,W.Va. W7
11	IndianaHarbor,Ind. I-2
11	IndianaHarbor,Ind. Y1
11	JerseyCity,N.J. A17
11	Johnstown,Pa. B2
11	Joliet,Ill. P22
11	KansasCity,Mo. 85
11	Knoxville,Tenn. K6
11	Lackawanna,N.Y. B2
11	LosAngeles B3
11	Madison,Ill. L1
11†	Medford,Mass. N13
11	Milton,Pa. M18
11	Minnequa,Colo. C10
11	Niles,Calif. P1
11	Pittsburg,Calif. C11
11	Pittsburgh J5
11	Portland,Oreg .O4
11	St.Louis M11
11†	St.Louis M11
11	SandSprings,Okla. 85
11	Seattle B3
11	SouthChicago,Ill. R2
11	SouthSanFrancisco B3
11	Sterling,Ill. N15
11	Struthers,O. Y1
11†	Tonawanda,N.Y. B12
11	Torrance,Calif. C11
11†	Williamsport,Pa. 819
11	Youngstown U5

†Rail steel.

‡Also available in high-strength, low-alloy steel.

Abrasion Resistant Bars, Hot-Rolled

Bessemer,Ala. T2
Clairton,Pa. U5
Fairfield,Ala. T2
Fairless,Pa. U5
Gary,Ind. U5
LosAngeles,B3
Seattle B3
SouthSanFrancisco B3
Youngstown U5

Rail Steel Bars

Avis,Pa. J8
ChicagoHts.,Ill. C2
ChicagoHts.,Ill. I-2
Franklin,Pa. F5
Madison,Ill. L1
Medford,Mass. N13
St.Louis M11
Tonawanda,N.Y. B12
Williamsport,Pa. 819

Wrought Iron Bars

Economy,Pa. B14
McKeesRocks,Pa. L5

STRUCTURALS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Angles

Equal (carbon)

Aliquippa, Pa. J5
Avis, Pa.† J8
Bessemer, Ala. T2
Bethlehem, Pa. B2
Birmingham C15
Clairton, Pa. U5
Elkhart, Ind. M17
Fairfield, Ala. T2
Fontana, Calif. K1
Gadsden, Ala. R2
Gary, Ind. U5
Geneva, Utah C11
Houston S5
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Joliet, Ill. B22
KansasCity, Mo. S5
Knoxville, Tenn. K6
Lackawanna, N.Y. B2
LosAngeles B3
Minnequa, Colo. C10
Munhall, Pa. U5
Niles, Calif. P1
Phoenixville, Pa. P4
Portland, Oreg. O4
Seattle B3
SouthChicago, Ill. U5
SouthChicago, Ill. W14
SouthSanFrancisco B3
Tonawanda, N.Y.† B12
Torrance, Calif. C11
Warren, O. V4
Williamsport, Pa.† S19
Youngstown Y1

†Rail steel.

Equal (alloy)

Aliquippa, Pa. J5
Clairton, Pa. U5
Elkhart, Ind. M17
Fontana, Calif. K1
Gary, Ind. U5
Houston S5
IndianaHarbor, Ind. Y1
Munhall, Pa. U5
Portland, Oreg. O4
SouthChicago, Ill. U5
Youngstown Y1

Equal (high-strength)

Aliquippa, Pa. J5
Bessemer, Ala. T2
Bethlehem, Pa. B2
Clairton, Pa. U5
Elkhart, Ind. M17
Fairfield, Ala. T2
Fontana, Calif. K1
Gary, Ind. U5
Geneva, Utah C11
Houston S5
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Lackawanna, N.Y. B2
LosAngeles B3
Munhall, Pa. U5
Seattle B3
SouthChicago, Ill. U5
SouthSanFrancisco B3
Youngstown Y1

Unequal (carbon)

Aliquippa, Pa. J5
Avis, Pa.† J8
Bessemer, Ala. T2
Bethlehem, Pa. B2
Birmingham C15
ChicagoHts., Ill.† C2
Clairton, Pa. U5
Elkhart, Ind. M17
Fairfield, Ala. T2
Fontana, Calif. K1
Franklin, Pa.† F5
Gadsden, Ala. R2
Gary, Ind. U5
Geneva, Utah C11
Houston S5
Huntington, W.Va. W7
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Joliet, Ill. P22
KansasCity, Mo. S5
Knoxville, Tenn. K6
Lackawanna, N.Y. B2
LosAngeles B3
Minnequa, Colo. C10
Munhall, Pa. U5
Niles, Calif. P1
Phoenixville, Pa. P4
Portland, Oreg. O4
Seattle B3
SouthChicago, Ill. U5
SouthChicago, Ill. W14
SouthSanFrancisco B3
Tonawanda, N.Y.† B12
Torrance, Calif. C11
Warren, O. V4
Williamsport, Pa.† S19
Youngstown Y1

†Rail steel.

Unequal (alloy)

Aliquippa, Pa. J5
Clairton, Pa. U5
Elkhart, Ind. M17
Fontana, Calif. K1
Gary, Ind. U5
Houston S5
IndianaHarbor, Ind. Y1
Munhall, Pa. U5
Portland, Oreg. O4
SouthChicago, Ill. U5
Youngstown Y1

Unequal (high-strength)

Aliquippa, Pa. J5
Bessemer, Ala. T2
Bethlehem, Pa. B2
Clairton, Pa. U5
Elkhart, Ind. M17
Fairfield, Ala. T2
Fontana, Calif. K1
Gary, Ind. U5
Geneva, Utah C11
Houston S5
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Lackawanna, N.Y. B2
LosAngeles B3
Munhall, Pa. U5
Seattle B3
SouthChicago, Ill. U5
SouthSanFrancisco B3
Youngstown Y1

Bulb (carbon)

Bethlehem, Pa. B2
Clairton, Pa. U5
Fairfield, Ala. T2
Gary, Ind. U5
Geneva, Utah C11
IndianaHarbor, Ind. I-2
Johnstown, Pa. B2
Munhall, Pa. U5
Phoenixville, Pa. P4
SouthChicago, Ill. U5

Bulb (alloy)

Clairton, Pa. U5
Gary, Ind. U5
Munhall, Pa. U5
SouthChicago, Ill. U5

Bulb (high-strength)

Bethlehem, Pa. B2
Clairton, Pa. U5
Fairfield, Ala. T2
Gary, Ind. U5
Geneva, Utah C11
IndianaHarbor, Ind. I-2
Johnstown, Pa. B2
Munhall, Pa. U5
SouthChicago, Ill. U5

Special (carbon)

Clairton, Pa. U5
Elkhart, Ind. M17
Fontana, Calif. K1
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Tonawanda, N.Y.† B12
Youngstown Y1

†Rail steel.

Special (alloy)

Clairton, Pa. U5
Elkhart, Ind. M17
IndianaHarbor, Ind. Y1
Youngstown Y1

Special (high-strength)

Clairton, Pa. U5
Elkhart, Ind. M17
IndianaHarbor, Ind. Y1
Youngstown Y1

Beams

Standard "I" (carbon)

Aliquippa, Pa. J5
Bessemer, Ala. T2
Bethlehem, Pa. B2
Clairton, Pa. U5
Fairfield, Ala. T2
Fontana, Calif. K1
Gary, Ind. U5
Geneva, Utah C11
Houston S5
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Lackawanna, N.Y. B2
LosAngeles B3
Minnequa, Colo. C10
Munhall, Pa. U5
Phoenixville, Pa. P4
Seattle B3
SouthChicago, Ill. U5
SouthSanFrancisco B3
Torrance, Calif. C11
Weirton, W.Va. W6

Standard "I" (alloy)

Clairton, Pa. U5
Fontana, Calif. K1
Gary, Ind. U5
Houston S5
Munhall, Pa. U5
SouthChicago, Ill. U5

Standard "I" (high-strength)

Aliquippa, Pa. J5
Bessemer, Ala. T2
Bethlehem, Pa. B2
Clairton, Pa. U5
Fontana, Calif. K1
Gary, Ind. U5
Geneva, Utah C11
Houston S5
IndianaHarbor, Ind. I-2
IndianaHarbor, Ind. Y1
Lackawanna, N.Y. B2
LosAngeles B3
Munhall, Pa. U5
Seattle B3
SouthChicago, Ill. U5
SouthSanFrancisco B3

"H" (carbon)

Clairton, Pa. U5
Fairfield, Ala. T2
Fontana, Calif. K1
Geneva, Utah C11
IndianaHarbor, Ind. I-2
Minnequa, Colo. C10
Munhall, Pa. U5
Phoenixville, Pa. P4
SouthChicago, Ill. U5
Torrance, Calif. C11
Weirton, W.Va. W6

"H" (alloy)

Clairton, Pa. U5
Fontana, Calif. K1
Munhall, Pa. U5
SouthChicago, Ill. U5

"H" (high-strength)

Clairton, Pa. U5
Fontana, Calif. K1
Geneva, Utah C11
IndianaHarbor, Ind. I-2
Munhall, Pa. U5
SouthChicago, Ill. U5

Wide Flange (carbon)

Bethlehem, Pa. B2
Fontana, Calif. K1
Lackawanna, N.Y. B2
Munhall, Pa. U5
SouthChicago, Ill. U5
Weirton, W.Va. W6

Wide Flange (alloy)

Fontana, Calif. K1
Munhall, Pa. U5
SouthChicago, Ill. U5

Wide Flange (high-strength)

Bethlehem, Pa. B2
Fontana, Calif. K1
Lackawanna, N.Y. B2
Munhall, Pa. U5
SouthChicago, Ill. U5

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Channels

Standard (carbon)

Aliquippa,Pa. J5
Bessemer,Ala. T2
Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Fairfield,Ala. T2
Fontana,Calif. K1
Gadsden,Ala. R2
Gary,Ind. U5
Geneva,Utah C11
Houston S5
IndianaHarbor,Ind. I-2
Joliet,Ill. P22
KansasCity,Mo. S5
Knoxville,Tenn. K6
Lackawanna,N.Y. B2
LosAngeles B3
Minnequa,Colo. C10
Munhall,Pa. U5
Niles,Calif. P1
Phoenixville,Pa. P4
Portland,Oreg. O4
Seattle B3
SouthChicago,Ill. U5
SouthChicago,Ill. W14
SouthSanFrancisco B3
Torrance,Calif. C11
Warren,O. V4
Weirton,W.Va. W6

Standard (alloy)

Clairton,Pa. U5
Elkhart,Ind. M17
Fontana,Calif. K1
Gary,Ind. U5
Houston S5
Munhall,Pa. U5
Portland,Oreg. O4
SouthChicago,Ill. U5

Standard (high-strength)

Aliquippa,Pa. J5
Bessemer,Ala. T2
Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Fontana,Calif. K1
Gary,Ind. U5
Geneva,Utah C11
Houston S5
IndianaHarbor,Ind. I-2
Lackawanna,N.Y. B2
LosAngeles B3
Munhall,Pa. U5
Seattle B3
SouthChicago,Ill. U5
SouthSanFrancisco B3

Carbuilding (carbon)

Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Fairfield,Ala. T2
Fontana,Calif. K1
Gary,Ind. U5
Geneva,Utah C11
IndianaHarbor,Ind. I-2
Lackawanna,N.Y. B2
Munhall,Pa. U5
SouthChicago,Ill. U5

Carbuilding (alloy)

Clairton,Pa. U5
Elkhart,Ind. M17
Fontana,Calif. K1
Gary,Ind. U5
Munhall,Pa. U5
SouthChicago,Ill. U5

Carbuilding (high-strength)

Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Fontana,Calif. K1
Gary,Ind. U5
Geneva,Utah C11
IndianaHarbor,Ind. I-2
Lackawanna,N.Y. B2
Munhall,Pa. U5
SouthChicago,Ill. U5

Shipbuilding (carbon)

Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Fairfield,Ala. T2
Fontana,Calif. K1
Gary,Ind. U5
Geneva,Utah C11
IndianaHarbor,Ind. I-2
Lackawanna,N.Y. B2
Munhall,Pa. U5
Phoenixville,Pa. P4
SouthChicago,Ill. U5

Shipbuilding (alloy)

Clairton,Pa. U5
Elkhart,Ind. M17
Fontana,Calif. K1
Gary,Ind. U5
Munhall,Pa. U5
SouthChicago,Ill. U5

Shipbuilding (high-strength)

Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Fontana,Calif. K1
Gary,Ind. U5
Geneva,Utah C11
IndianaHarbor,Ind. I-2
Lackawanna,N.Y. B2
Munhall,Pa. U5
SouthChicago,Ill. U5

Tees

Equal (carbon)

Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Gary,Ind. U5
Lackawanna,N.Y. B2
SouthSanFrancisco B3

Equal (alloy)

Clairton,Pa. U5
Elkhart,Ind. M17
Gary,Ind.U5

Equal (high-strength)

Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Gary,Ind. U5
Lackawanna,N.Y. B2
SouthSanFrancisco B3

Unequal (carbon)

Aliquippa,Pa. J5
Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Gary,Ind. U5
Lackawanna,N.Y. B2
Phoenixville,Pa. P4

Unequal (alloy)

Clairton,Pa. U5
Elkhart,Ind. M17
Gary,Ind. U5

Unequal (high-strength)

Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Gary,Ind. U5
Lackawanna,N.Y. B2

Elevator (carbon)

Braddock,Pa. U5
Clairton,Pa. U5

Elevator (alloy)

Braddock,Pa. U5
Clairton,Pa. U5

Elevator (high-strength)

Braddock,Pa. U5
Clairton,Pa. U5

Zees

Carbon

Bessemer,Ala. T2
Bethlehem,Pa. B2
Clairton,Pa. U5
Gary,Ind. U5
Geneva,Utah C11
IndianaHarbor,Ind. I-2
Lackawanna,N.Y. B2
Phoenixville,Pa. P4
SouthChicago,Ill. U5
Youngstown Y1

Alloy

Clairton,Pa. U5
Gary,Ind. U5
SouthChicago,Ill U5
Youngstown Y1

High-Strength

Bessemer,Ala. T2
Bethlehem,Pa. B2
Clairton,Pa. U5
Gary,Ind. U5
Geneva,Utah C11
IndianaHarbor, Ind. I-2
Lackawanna,N.Y. B2
SouthChicago,Ill. U5
Youngstown Y1

Carbuilding (carbon)

Clairton,Pa. U5
Geneva,Utah C11
IndianaHarbor,Ind. I-2
Munhall,Pa. U5
SouthChicago,Ill. U5
Youngstown Y1

Carbuilding (alloy)

Clairton,Pa. U5
Munhall,Pa. U5
SouthChicago,Ill. U5
Youngstown Y1

Carbuilding (high-strength)

Clairton,Pa. U5
Geneva,Utah C11
IndianaHarbor,Ind. I-2
Munhall,Pa. U5
SouthChicago,Ill. U5
Youngstown Y1

SPECIAL SECTIONS (carbon)

Aliquippa,Pa. J5
Bethlehem,Pa. B2
Clairton,Pa. U5
Elkhart,Ind. M17
Fontana,Calif. K1
IndianaHarbor,Ind. I-2
IndianaHarbor,Ind. Y1
Johnstown,Pa. B2
Lackawanna,N.Y. B2
LosAngeles B3
Munhall,Pa. U5
Seattle B3
SouthChicago,Ill. U5
SouthChicago,Ill. W14
SouthSanFrancisco B3
Warren,O. V4
Youngstown Y1
Check with mill for sizes Phoenixville, Pa. P4

COLD-FORMED SECTIONS (carbon)

Elkhart,Ind. M17
Gary,Ind. U5

BEARING PILES (carbon)

Bethlehem,Pa. B2
Lackawanna,N.Y. B2
Munhall,Pa. U5
SouthChicago,Ill. U5

SHEET PILING (carbon)

IndianaHarbor,Ind. I-2
Lackawanna,N.Y. B2
Munhall,Pa. U5
SouthChicago,Ill. U5
Weirton,W.Va. W6

MECHANICAL TUBING

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Seamless, Round, Hot-Finished

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.095	1-1⅝	Milwaukee G3
.095–.375	1⅛-2¼	Ellwood City, Pa. N3
.095–.50	2½	Ellwood City, Pa. N3
.095–1.50	1⅞-9⅝	Beaver Falls, Pa. B1
.095 and hvr.	1.90-7½	Allenport, Pa. P7
.109–.250	1½-1⅝	Milwaukee G3
.109–.280	1⅝	Milwaukee G3
.109–.325	1⅞	Milwaukee G3
.109–.437	2-2¼	Milwaukee G3
.109–.50	2⅜	Ellwood City, Pa. N3
.109–.590	2⅝-2½	Milwaukee G3
.109–.625	3-3¼	Ellwood City, Pa. N3
.120–.238	⅜-1	Gary, Ind. N3
.120–.312	1⅛-1⅝	Gary, Ind. N3
.120–.312	1½	Ellwood City, Pa. N3
.120–.343	1½-1⅞	Gary, Ind. N3
.120–.50	over 2-2⅛	Canton, O. T7
.120–.625	over 2⅛-2½	Canton, O. T7
.120–.625	over 2½-2⅝	Canton, O. T7
.120–.625	3½-4	Ellwood City, Pa. N3
.120–.690	2⅝-2⅞	Milwaukee G3
.120–.750	over 2⅝-3⅛	Canton, O. T7
.120–.750	3-3½	Milwaukee G3
.134–.312	1⅛-1⅝	Ellwood City, Pa. N3
.134–.437	1⅝-2	Canton, O. T7
.134–.437	1.90-2⅛	Gary, Ind. N3
.134–.625	4¼	Ellwood City, Pa. N3
.134–.750	3⅝-4	Milwaukee G3
.134–.875	4¼	Milwaukee G3
.134–1	over 3¼-3⅜	Canton, O. T7
.134–1	4½	Ellwood City, Pa. N3
.134–1.125	over 3⅜-4	Canton, O. T7
.134–1.25	4⅜	Ellwood City, Pa. N3
.134–1.375	5	Ellwood City, Pa. N3
.148–.625	2¼-2½	Gary, Ind. N3
.148–.875	4½-5	Milwaukee G3
.148–1.25	over 4-4¼	Canton, O. T7
.148–1.375	5½	Ellwood City, Pa. N3
.154–.436	2⅝	Youngstown Y1
.154–.552	2⅝	Youngstown Y1
.154–.943	2⅝-14	Ambridge, Pa. N2
.165–.812	2⅝-3	Gary, Ind. N3
.165–1	5¼	Milwaukee G3
.165–1.125	5⅝-5½	Milwaukee G3
.165–1.25	over 4¼-4⅝	Canton, O. T7
.165–1.375	5⅝	Gary, Ind. N3
.165–1.50	6-6½	Ellwood City, Pa. N3
.165–1.562	5½-5⅝	Gary, Ind. N3
.165–1.625	7-7½	Ellwood City, Pa. N3
.165–1.687	5⅝-5⅞	Gary, Ind. N3
.165–1.875	6-6⅝	Gary, Ind. N3
.165–2	6½-6⅝	Gary, Ind. N3
.180–1.625	8	Ellwood City, Pa. N3
.180–2	6⅝	Gary, Ind. N3
.180–2.125	6⅞-7⅛	Gary, Ind. N3
.180–2.250	7¼-7⅝	Gary, Ind. N3
.180–2.50	7½-7⅞	Gary, Ind. N3
.187–.60	3½	Youngstown Y1
.187–.636	4	Youngstown Y1
.187–.674	4½	Youngstown Y1
.187–.710	5	Youngstown Y1
.187–.750	5½	Youngstown Y1
.187–.750	5⅞	Youngstown Y1
.187–.812	3¼	Gary, Ind. N3
.187–.812	3½	Gary, Ind. N3
.187–.812	3⅝	Gary, Ind. N3
.187–.812	3⅞-3⅞	Gary, Ind. N3
.187–.937	4-4½	Gary, Ind. N3
.187–1	4¼-4⅝	Gary, Ind. N3
.187–1.125	4½-4⅞	Gary, Ind. N3
.187–1.250	5-5¼	Gary, Ind. N3
.188–.60	3½	Aliquippa, Pa. J5
.188–1.125	5⅝	Milwaukee G3
.188–1.50	over 4⅝-5¼	Canton, O. T7
.190–.426	2⅜	Aliquippa, Pa. J5
.20–2.50	8	Gary, Ind. N3
.203–.552	2⅞	Aliquippa, Pa. J5
.203–1.625	over 5¼-5⅝	Canton, O. T7
.203–1.625	8½	Ellwood City, Pa. N3
.218–.864	6⅝	Youngstown Y1
.218–.864	7	Youngstown Y1
.218–.864	7⅝	Youngstown Y1
.218–.875	8⅝	Youngstown Y1
.220–.710	5	Aliquippa, Pa. J5
.220–1.125	6	Milwaukee G3
.220–1.50	8⅜-8⅝	Gary, Ind. N3
.220–1.625	9	Ellwood City, Pa. N3
.220–2	8½-8¾	Gary, Ind. N3
.226–.636	4	Aliquippa, Pa. J5
.231–.540	7	Aliquippa, Pa. J5
.237–.674	4½	Aliquippa, Pa. J5
.244–.415	5½	Aliquippa, Pa. J5
.250–.864	6⅝	Aliquippa, Pa. J5
.250–.875	8⅝	Aliquippa, Pa. J5
.250–.875	9⅝	Youngstown Y1
.250–.875	10¾	Aliquippa, Pa. J5
.250–.875	10¾	Youngstown Y1
.250–1.125	6¼	Milwaukee G3
.250–1.625	9¼	Ellwood City, Pa. N3
.250–1.750	9½	Ellwood City, Pa. N3
.258–.750	5⅞	Aliquippa, Pa. J5
.284–2.0	9¾-10	Ellwood City, Pa. N3
.288–.380	6	Aliquippa, Pa. J5
.30–.50	7⅝	Aliquippa, Pa. J5
.30–1.125	6½	Milwaukee G3
.312–.545	9⅝	Aliquippa, Pa. J5
.312–.875	12¾	Aliquippa, Pa. J5
.313–1.875	over 5⅜-6	Canton, O. T7
.330–.514	13⅝	Aliquippa, Pa. J5
.333–.489	11⅜	Aliquippa, Pa. J5
.350–1.125	6¾	Milwaukee G3
.350–1.125	7-7⅝	Milwaukee G3
.375–.875	14	Aliquippa, Pa. J5
.375–1.125	8	Milwaukee G3
.375–1.875	10¾	Ellwood City, Pa. N3
.375–2	over 6-7	Canton, O. T7
.375–2	10⅛-10½	Ellwood City, Pa. N3
.438–2.50	over 7-7½	Canton, O. T7
.50–2.625	over 7½-8	Canton, O. T7
.563–2.750	over 8-8½	Canton, O. T7
.625–3	over 8½-10½	Canton, O. T7

Seamless, Round, Cold-Finished

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.002–.004	.012	Norristown, Pa. S23
.002–.016	1/32	Norristown, Pa. S23
.003–.028	1/16	Sharon, Pa. S31
.003–.032	1/16	Norristown, Pa. S23
.004–.042	1/16	Sharon, Pa. S31
.004–.049	1/16	Norristown, Pa. S23
.004–.049	1/16	Sharon, Pa. S31
.004–.058	1/16	Norristown, Pa. S23
.005–.049	1/16	Sharon, Pa. S31
.005–.065	1/16	Norristown, Pa. S23
.005–.065	1/16	Sharon, Pa. S31
.005–.083	1/16	Norristown, Pa. S23
.005–.083	1/16	Sharon, Pa. S31
.005–.095	1/16	Norristown, Pa. S23
.005–.125	1/16	Norristown, Pa. S23
.005–.125	1/16	Sharon, Pa. S31
.006–.125	1/16	Sharon, Pa. S31
.006–.125	1/16	Sharon, Pa. S31
.007–.125	1/16	Norristown, Pa. S23
.008–.125	1/16	Sharon, Pa. S31
.008–.125	1/16	Sharon, Pa. S31
.010–.035	1/16	Norristown, Pa. S23
.010–.035	1/16	Norristown, Pa. S23
.010–.125	1/16	Norristown, Pa. S23
.010–.125	1/16	Norristown, Pa. S23
.010–.125	1/16	Norristown, Pa. S23
.010–.156	1/16	Sharon, Pa. S31
.012–.035	1	Norristown, Pa. S23
.012–.035	1⅛	Norristown, Pa. S23
.016–.065	1/16	Los Angeles P2
.016–.083	1/16	Los Angeles P2
.016–.109	1/16	Los Angeles P2
.016–.134	1/16	Los Angeles P2
.016–.148	1/16	Los Angeles P2
.016–.165	1/16	Los Angeles P2
.016–.188	1/16	Los Angeles P2
.016–.188	1/16-1/8	Los Angeles P2
.016–.250	1/16	Los Angeles P2
.018–.065	1/16	South Lyon, Mich. M7
.018–.083	1/16	South Lyon, Mich. M7
.018–.109	1/16	South Lyon, Mich. M7
.018–.125	1/16	South Lyon, Mich. M7
.018–.134	1/16	South Lyon, Mich. M7
.018–.134	1/16	South Lyon, Mich. M7
.018–.156	1/16	South Lyon, Mich. M7
.018–.156	1/16	South Lyon, Mich. M7
.018–.188	1/16	South Lyon, Mich. M7
.020–.156	1/16	Sharon, Pa. S31
.020–.250	1/16	Los Angeles P2
.020–.313	1/16-1/8	Los Angeles P2
.020–.375	1-2 1/16	Los Angeles P2
.022–.188	1/16	South Lyon, Mich. M7
.022–.218	1/16	South Lyon, Mich. M7
.024–.375	2 1/16-2 1/16	Los Angeles P2
.025–.218	1/16	South Lyon, Mich. M7
.025–.250	1/16	South Lyon, Mich. M7
.025–.250	1	South Lyon, Mich. M7
.028–.083	1/16	Ellwood City, Pa. N3
.028–.083	1/16	Gary, Ind. N3
.028–.095	1/16	Shelby, O. O2
.028–.095	1/16-1/8	Milwaukee G3
.028–.120	1/16-1/8	Milwaukee G3
.028–.134	1/16	Ellwood City, Pa. N3
.028–.134	1/16	Gary, Ind. N3
.028–.148	1/16	Shelby, O. O2
.028–.156	1/16	Ellwood City, Pa. N3
.028–.156	1/16	Gary, Ind. N3
.028–.156	1/16-1/8	Milwaukee G3
.028–.188	1/16-1/8	Milwaukee G3
.028–.188	1	Sharon, Pa. S31
.028–.203	1/16	Shelby, O. O2
.028–.219	1/16	Ellwood City, Pa. N3
.028–.219	1/16	Gary, Ind. N3
.028–.238	1/16	Shelby, O. O2
.028–.238	1/16	Shelby, O. O2
.028–.250	1/16	Ellwood City, Pa. N3
.028–.250	1/16	Gary, Ind. N3
.028–.281	1 1/16	South Lyon, Mich. M7
.028–.281	1 1/16	South Lyon, Mich. M7
.028–.284	1/16	Shelby, O. O2
.028–.284	1	Shelby, O. O2
.028–.284	1 1/16	Shelby, O. O2
.028–.313	1 1/16	South Lyon, Mich. M7
.028–.313	1 1/16	South Lyon, Mich. M7
.028–.320	1/16	Gary, Ind. N3
.028–.344	1/16	Ellwood City, Pa. N3
.028–.350	1	Gary, Ind. N3
.028–.375	1	Ellwood City, Pa. N3
.028–.375	2 1/16	Los Angeles P2
.028–.437	1 1/16-1 1/16	Ellwood City, Pa. N3
.028–.437	1 1/16-1 1/16	Gary, Ind. N3
.028–.50	1 1/16-1 1/16	Ellwood City, Pa. N3
.028–.50	1 1/16-1 1/16	Gary, Ind. N3
.030–.220	1/16-1 1/16	Wallington, N.J. T12
.030–.270	1 1/16-1 1/16	Wallington, N.J. T12
.032–.375	1 1/16	South Lyon, Mich. M7
.032–.375	1 1/16	South Lyon, Mich. M7
.032–.438	1 1/16	South Lyon, Mich. M7
.032–.438	1 1/16	South Lyon, Mich. M7
.035–.188	1 1/16	Sharon, Pa. S31
.035–.188	1 1/16	Sharon, Pa. S31
.035–.188	1 1/16	Sharon, Pa. S31
.035–.188	1 1/16	Sharon, Pa. S31
.035–.250	1-1 1/16	Milwaukee G3
.035–.30	1 1/16	Shelby, O. O2
.035–.30	1 1/16	Shelby, O. O2
.035–.30	1 1/16	Shelby, O. O2
.035–.375	1 1/16	Milwaukee G3
.035–.375	1 1/16	Shelby, O. O2
.035–.375	2 1/16-3	Los Angeles P2
.035–.50	1 1/16	South Lyon, Mich. M7
.035–.50	1 1/16	South Lyon, Mich. M7
.035–.562	1 1/16	Ellwood City, Pa. N3
.035–.562	1 1/16	Gary, Ind. N3
.035–.562	1 1/16	South Lyon, Mich. M7
.035–.562	2	South Lyon, Mich. M7
.035–.625	1 1/16-1 1/16	Ellwood City, Pa. N3
.035–.625	1 1/16-1 1/16	Gary, Ind. N3
.035–.750	2	Gary, Ind. N3
.035–.750	2-2 1/16	Ellwood City, Pa. N3
.035–.750	2 1/16	Gary, Ind. N3
.035–.875	2 1/16	Ellwood City, Pa. N3
.035–1	1/16-9 1/16	Beaver Falls, Pa. B1
.035–1	2 1/16	Ellwood City, Pa. N3
.045–.410	1 1/16-2 1/16	Wallington, N.J. T12
.045–.50	2 1/16-2 1/16	Wallington, N.J. T12
.049–.180 incl.	.1 1/16	Adrian, Mich. S2

MECHANICAL TUBING

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

○ Seamless, Round, Cold-Finished

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.049–.375	1⅝-1⅞	Milwaukee G3
.049–.375	3 1/16-3⅛	LosAngeles P2
.049–.438	2	Shelby,O. O2
.049–.562	2⅛	SouthLyon,Mich. M7
.049–.562	2⅛	SouthLyon,Mich. M7
.049–.563	2⅛	Shelby,O. O2
.049–.812	2½	Gary,Ind. N3
.049–.875	2¾	Gary,Ind. N3
.049–1	3	Gary,Ind. N3
.049–1.062	3½	Gary,Ind. N3
.049–1.125	3-3¾	EllwoodCity,Pa. N3
.058–.165 incl.	1 1/16	Adrian,Mich. S2
.058–.562	2⅜	SouthLyon,Mich. M7
.058–.625	2½	SouthLyon,Mich. M7
.058–.625	2⅜	Shelby,O. O2
.060–.50	2⅝-4⅜	Wallington,N.J. T12
.065 & lighter	1/16-3/8 incl.	Adrian,Mich. S2
.065 max.	over 1⅛-1½ incl.	Pittsburgh S22
.065–.125	⅜-1	Canton,O. T7
.065–.187	1-1¼	Canton,O. T7
.065–.375	2-2½	Milwaukee G3
.065–.563	2½	Shelby,O. O2
.065–.625	2⅝	SouthLyon,Mich. M7
.065–.625	2⅜	SouthLyon,Mich. M7
.065–.750	3	Shelby,O. O2
.065–1.125	4	Gary,Ind. N3
.065–1.187	4½	Gary,Ind. N3
.065–1.250	4-4½	EllwoodCity,Pa. N3
.065–1.375	4¾-5	EllwoodCity,Pa. N3
.065–1.375	5	Gary,Ind. N3
.065–1.5	⅜-7⅛	Allenport,Pa. P7
.072–.438	2⅛-2⅜	Milwaukee G3
.072–.625	2⅜	SouthLyon,Mich. M7
.072–.875	3¼	Shelby,O. O2
.075–.50	4¾-5⅜	Wallington,N.J. T12
.083 max.	over 1-1¼ incl.	Pittsburgh S22
.083–.165 incl.	1⅜	Adrian,Mich. S2
.083–.250	over 1¼-1½	Canton,O. T7
.083–.50	2½	Milwaukee G3
.083–.625	3	SouthLyon,Mich. M7
.083–.875	3½	Shelby,O. O2
.083–1.375	5½	EllwoodCity,Pa. N3
.083–1.50	5½	Gary,Ind. N3
.083–1.50	6-6½	EllwoodCity,Pa. N3
.083–1.562	6	Gary,Ind. N3
.083–1.562	6½	Gary,Ind. N3
.083–.219	3½	LosAngeles P2
.093–.688	5⅝-7	Wallington,N.J. T12
.095 max.	over ⅜-1 incl.	Pittsburgh S22
.095–.313	over 1½-1⅝	Canton,O. T7
.095–.50	2⅝	Milwaukee G3
.095–.625	2⅜-2⅝	Milwaukee G3
.095–.938	3⅜	Shelby,O. O2
.095–1.50	7	EllwoodCity,Pa. N3
.095–1.562	7	Gary,Ind. N3
.109–.219	3⅝	LosAngeles P2
.109–.375	over 1⅜-2¼	Canton,O. T7
.109–.50	over 2¼-2½	Canton,O. T7
.109–1	4	Shelby,O. O2
.109–1.50	7½	EllwoodCity,Pa. N3
.109–1.50	7½	Gary,Ind. N3
.120 max.	⅛-⅜ incl.	Pittsburgh S22
.120 & lighter	1/16-3/16 incl.	Adrian,Mich. S2
.120–.562	over 2½-2⅝	Canton,O. T7
.120–.625	over 2⅜-3	Canton,O. T7
.120–.625	3-3⅛	Milwaukee G3
.120–.750	3⅛-3⅞	Milwaukee G3
.120–.875	4-4¼	Milwaukee G3
.120–1	4½	Milwaukee G3
.120–1.250	8	EllwoodCity,Pa. N3
.125–.713	7-8½	Wallington,N.J. T12
.134–.750	over 3-3½	Canton,O. T7
.134–.875	over 3¼-3⅝	Canton,O. T7
.134–1	4¼	Shelby,O. O2
.134–1.125	8½-9	EllwoodCity,Pa. N3
.134–1.375	8	Gary,Ind. N3
.156–.875	8½-11	Wallington,N.J. T12
.156–1	9½-10½	EllwoodCity,Pa. N3
.156–1.250	4½	Shelby,O. O2
.1562 & lighter	5/32-1/4 incl.	Adrian,Mich. S2
.165–.219	3¾	LosAngeles P2
.165–1	over 3¾-4¼	Canton,O. T7
.180–1.250	4¾	Shelby,O. O2
.180–1.250	5	Shelby,O. O2
.187–1	8¼	Gary,Ind. N3
.187–1	11-13½	Wallington,N.J. T12
.1875 & lighter	3/16-1/4 incl.	Adrian,Mich. S2
.188–1	4¼-6½	Milwaukee G3
.188–1	10¾	EllwoodCity,Pa. N3
.188–1.125	over 4¼-4⅝	Canton,O. T7
.203–1.250	over 4⅜-5⅛	Canton,O. T7
.218–1.375	13½-16	Wallington,N.J. T12
.250–1	5⅜-7½	Milwaukee G3
.250–1.250	5¼	Shelby,O. O2
.250–1.250	over 5¼-6	Canton,O. T7
.250–1.250	5½	Shelby,O. O2
.313–1.250	5¾	Shelby,O. O2
.313–1.250	6	Shelby,O. O2
.375–.563	7	Shelby,O. O2
.375–.813	6¼	Shelby,O. O2
.375–.813	6½	Shelby,O. O2
.375–.813	6⅝	Shelby,O. O2
.438–1.250	over 6-7½	Canton,O. T7
.50–1.250	over 7½-8½	Canton,O. T7
.563–1.250	over 8½-10	Canton,O. T7

□ Seamless, Square, Cold-Finished

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.005–.125	1/32-⅛	Norristown,Pa. S23
.030–.088	⅛-1½	BeaverFalls,Pa. B1
.035–.065	¼-5/16	LosAngeles P2
.035–.065	⅜	EllwoodCity,Pa. N3
.035–.083	⅜-7/16	LosAngeles P2
.035–.083	½	EllwoodCity,Pa. N3
.035–.095	⅝	EllwoodCity,Pa. N3
.035–.109	⅝-⅞	LosAngeles P2
.035–.120	¾	EllwoodCity,Pa. N3
.035–.120	1/16-1 1/16	LosAngeles P2
.035–.134	⅞	EllwoodCity,Pa. N3
.035–.134	1½	LosAngeles P2
.035–.156	1	EllwoodCity,Pa. N3
.035–.188	1⅛	EllwoodCity,Pa. N3
.035–.219	1¼-1⅜	EllwoodCity,Pa. N3
.035–.250	¼-2½	SouthLyon,Mich. M7
.035–.250	1½	EllwoodCity,Pa. N3
.049–.134	1 7/16-2¼	LosAngeles P2
.049–.148	1½-3	BeaverFalls,Pa. B1
.049–.250	1⅜-1⅞	EllwoodCity,Pa. N3
.049–.375	2	EllwoodCity,Pa. N3
.065–.375	2¼-2¾	EllwoodCity,Pa. N3
.065–.50	3	EllwoodCity,Pa. N3
.083–.50	3¼-3½	EllwoodCity,Pa. N3
.095–.50	3⅝-4⅜	EllwoodCity,Pa. N3
.120–.50	5-5½	EllwoodCity,Pa. N3
.125–.375	1½-4	BeaverFalls,Pa. B1
.188–.50	6-6½	EllwoodCity,Pa. N3
.188–.625	4-5	BeaverFalls,Pa. B1
.219–.375	7	EllwoodCity,Pa. N3
.220–.50	5-6	BeaverFalls,Pa. B1
Check with mill for sizes		Milwaukee G3

Hot-Finished

Check with mill for sizes	Milwaukee G3

▭ Seamless, Rectangular, Cold-Finished

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.005–.125	1/32-⅛ x up to ⅝	Norristown,Pa. S23
.030–.088	⅝ in. minor axis thru 1½ in. major axis	BeaverFalls,Pa. B1
.035–.250	¼ across flats to 2½ across flats	SouthLyon,Mich. M7
.035–.50	Max. major diam. of 8" based on ratio of sides not exceeding 4 to 1	EllwoodCity,Pa. N3
.049–.148	1½ in. minor axis thru 3 in. major axis	BeaverFalls,Pa. B1
.220–.375	3 in. minor axis thru 7 in. major axis	BeaverFalls,Pa. B1
Check with mill for sizes		LosAngeles P2

Hot-Finished

Check with mill for sizes	Milwaukee G3

□ Welded, Square, Hot-Rolled

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.025–.180	½-4	Warren,O. B9
.028–.083	½-1½	Evanston,Ill. M15
.028–.180	⅝-4	Detroit S14
.028–.220	½-4	Chicago N11
.035–.065	¼-5/16	LosAngeles P2
.035–.083	⅜-7/16	LosAngeles P2
.035–.109	⅝-¾	LosAngeles P2
.035–.120	1 1/16-1 7/16	LosAngeles P2
.035–.134	1½	LosAngeles P2
.049–.083	1	Sharon,Pa. S31
.049–.083	1⅛	Sharon,Pa. S31
.049–.083	1¼	Sharon,Pa. S31
.049–.083	1½	Sharon,Pa. S31
.049–.083	2	Sharon,Pa. S31
.049–.134	1 5/16-2¼	LosAngeles P2
.065	⅝-½	Rome,N.Y. R9
.065	⅝-1 1/16	Warren,O. V4
.065	½	Detroit W21
.065	⅝-3	OilCity,Pa. J5
.065–.083	⅝	Detroit W21
.065–.083	⅝	Rome,N.Y. R9
.065–.083	⅞	Warren,O. V4
.065–.095	⅝	Detroit W21
.065–.095	⅝-⅞	Rome,N.Y. R9
.065–.105	⅞-1	Detroit W21
.065–.120	⅝-2⅜	Detroit M20
.065–.120	1-1⅛	Rome,N.Y. R9
.065–.120	1-1¼	Warren,O. V4
.065–.120	1⅛-1½	Detroit W21
.065–.134	1¼-1⅝	Rome,N.Y. R9
.065–.134	1⅝	Warren,O. V4
.065–.134	1⅝-2¼	Detroit W21
.065–.165	1½-2¼	Warren,O. V4
.065–.187	2-2¾	Rome,N.Y. R9
.065–.20	Peripheries of 3" to 16" incl.	Brooklyn,N.Y. R2
.065–.20	Peripheries of 3" to 16" incl.	Cleveland R2
.065–.220	2½-4	Warren,O. V4
.083	⅝-3	OilCity,Pa. J5
.083–.187	3-3½	Rome,N.Y. R9
.095	1-3	OilCity,Pa. J5
.109	1¼-3	OilCity,Pa. J5
.120	1½-3	OilCity,Pa. J5
.134	1½-3	OilCity,Pa. J5
Check with mill for sizes		Piqua,O. A10
Check with mill for sizes		Shelby,O. O2

MECHANICAL TUBING

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

□ Welded, Square, Cold-Rolled

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.025–.180	½-4	Warren,O. B9
.028	½-1	OilCity,Pa. J5
.028–.049	½	Shelby,O. O2
.028–.049	⅝	Shelby,O. O2
.028–.065	⅝-½	Rome,N.Y. R9
.028–.065	⅝-¾	Warren,O. V4
.028–.065	⅝-1⅛	Shelby,O. O2
.028–.065	1⅛	Shelby,O. O2
.028–.083	½-1½	Evanston,Ill. M15
.028–.083	⅝	Rome,N.Y. R9
.028–.095	⅝-⅞	Rome,N.Y. R9
.028–.120	1-1⅛	Rome,N.Y. R9
.028–.134	Peripheries of 1" to 16" incl.	Brooklyn,N.Y. R2
.028–.134	Peripheries of 1" to 16" incl.	Cleveland R2
.028–.180	⅝-4	Detroit S14
.028–.220	½-4	Chicago N11
.030–.065	⅛	Detroit W21
.032–.083	⅝	Detroit W21
.032–.095	⅝	Detroit W21
.032–.105	⅝-1	Detroit W21
.032–.120	1⅛	Detroit W21
.035	½-1⅛	OilCity,Pa. J5
.035	½-2	Detroit M20
.035–.065	⅛-½	LosAngeles P2
.035–.085	⅝-1⅛	Warren,O. V4
.035–.065	1⅝	Shelby,O. O2
.035–.065	1½	Shelby,O. O2
.035–.085	1⅝	Shelby,O. O2
.035–.083	⅝-⅞	LosAngeles P2
.035–.083	⅞	Warren,O. V4
.035–.109	⅝-¾	LosAngeles P2
.035–.120	1⅛-1⅞	LosAngeles P2
.035–.120	1-1¼	Warren,O. V4
.035–.134	1¼-1⅝	Rome,N.Y. R9
.035–.134	1⅝-1⅞	Warren,O. V4
.035–.134	1½	LosAngeles P2
.042–.120	1¼-1⅝	Detroit W21
.049	½-2	OilCity,Pa. J5
.049–.065	1⅝	Shelby,O. O2
.049–.065	2	Shelby,O. O2
.049–.083	1	Sharon,Pa. S31
.049–.083	1¼	Sharon,Pa. S31
.049–.083	1⅝	Sharon,Pa. S31
.049–.083	1½	Sharon,Pa. S31
.049–.083	2	Sharon,Pa. S31
.049–.109	1	Warren,O. V9
.049–.109	1⅛	Warren,O. B9
.049–.109	1¼	Warren,O. B9
.049–.109	1½	Warren,O. B9
.049–.120	1-2¾	Detroit M20
.049–.120	1½	Detroit W21
.049–.134	1⅞-2¼	LosAngeles P2
.049–.134	1⅝-2¼	Detroit W21
.049–.134	2-2¼	Warren,O. V4
.049–.187	2	Rome,N.Y. R9
.065	½-3	OilCity,Pa. J5
.065–.134	2½-4	Warren,O. V4
.065–.187	2¼-2⅝	Rome,N.Y. R9
.083	⅝-3	OilCity,Pa. J5
.083–.187	3-3½	Rome,N.Y. R9
.095	1-3	OilCity,Pa. J5
.109	1⅛-3	OilCity,Pa. J5
.120	1½-3	OilCity,Pa. J5
.134	1½-3	OilCity,Pa. J5
Check with mill for sizes		Piqua,O. A10

○ Welded, Round, Hot-Rolled

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.018–.109	⅝-2	SinkingSpring,Pa. H8
.025–.180	½-4	Warren,O. B9
.028–.049	½	Shelby,O. O2
.028–.049	⅝	Shelby,O. O2
.028–.065	⅝	Shelby,O. O2
.028–.065	⅝	Toledo,O. T8
.028–.065	⅝	Shelby,O. O2
.028–.065	¾	Shelby,O. O2
.028–.065	⅞	Sharon,Pa. S31
.028–.065	1⅛	Sharon,Pa. S31
.028–.083	½-2	Evanston,Ill. M15
.028–.083	⅝	Sharon,Pa. S31
.028–.083	⅝-1⅝	Toledo,O. T8
.028–.083	⅞	Shelby,O. O2
.028–.083	1	Shelby,O. O2
.028–.083	1⅛	Shelby,O. O2
.028–.083	1¼	Shelby,O. O2
.028–.083	1⅜	Shelby,O. O2
.028–.083	1½	Shelby,O. O2
.028–.083	1⅝	Shelby,O. O2
.028–.095	1⅜	Shelby,O. O2
.028–.120	1	Sharon,Pa. S31
.028–.134	1⅛	Sharon,Pa. S31
.028–.134	1¼	Sharon,Pa. S31
.028–.134	1⅜	Sharon,Pa. S31
.028–.220	½-4	Chicago N11
.028–.260	⅜-5½	Detroit S14
.032–.109	1-1⅛	LosAngeles P2
.032–.120	1⅛-1½	LosAngeles P2
.035–.049	½	Sharon,Pa. S31
.035–.065	½	IndianaHarbor,Ind. Y1
.035–.065	½	Struthers,O. Y1
.035–.065	⅝	IndianaHarbor,Ind. Y1
.035–.065	⅝	Struthers,O. Y1
.035–.065	.706	IndianaHarbor,Ind. Y1
.035–.065	.706	Struthers,O. Y1
.035–.065	.840	Sharon,Pa. S31
.035–.083	⅝	IndianaHarbor,Ind. Y1
.035–.083	⅝	Struthers,O. Y1
.035–.083	⅞	IndianaHarbor,Ind. Y1
.035–.083	⅞	LosAngeles P2
.035–.083	⅞	Struthers,O. Y1
.035–.083	1/16	IndianaHarbor,Ind. Y1
.035–.083	1/16	Struthers,O. Y1
.035–.083	1	IndianaHarbor,Ind. Y1
.035–.083	1	Struthers,O. Y1
.035–.095	1⅛-1⅜	Toledo,O. T8
.035–.095	1⅛	Shelby,O. O2
.035–.095	1⅜	Sharon,Pa. S31
.035–.095	1⅜	Shelby,O. O2
.035–.095	1⅞	Shelby,O. O2
.035–.095	2	Shelby,O. O2
.035–.095	2⅛	Shelby,O. O2
.035–.095	2 1/16	Shelby,O. O2
.035–.109	1⅜-1⅞	Toledo,O. T8
.035–.120	1⅜-1⅞	LosAngeles P2
.035–.120	2-3¼	Toledo,O. T8
.035–.134	1½	Sharon,Pa. S31
.035–.134	1⅝	Sharon,Pa. S31
.035–.134	2	LosAngeles P2
.042–.062	⅝	Alton,Ill. L1
.042–.070	.706	Alton,Ill. L1
.042–.080	⅞	Alton,Ill. L1
.042–.083	⅞	Alton,Ill. L1
.042–.083	.922	Alton,Ill. L1
.042–.083	1⅛	IndianaHarbor,Ind. Y1
.042–.083	1⅛	Struthers,O. Y1
.042–.083	1.163	IndianaHarbor,Ind. Y1
.042–.083	1.163	Struthers,O. Y1
.042–.083	1¼	IndianaHarbor,Ind. Y1
.042–.083	1¼	Struthers,O. Y1
.042–.083	1⅜	IndianaHarbor,Ind. Y1
.042–.083	1⅜	Struthers,O. Y1
.042–.083	1.738	IndianaHarbor,Ind. Y1
.042–.083	1.738	Struthers,O. Y1
.042–.095	1½	IndianaHarbor,Ind. Y1
.042–.095	1½	Struthers,O. Y1
.042–.109	1	Alton,Ill. L1
.049–.065	1/16	IndianaHarbor,Ind. Y1
.049–.065	1/16	Struthers,O. Y1
.049–.065	1.90	Sharon,Pa. S31
.049–.080	1.315	Alton,Ill. L1
.049–.083	.405	IndianaHarbor,Ind. Y1
.049–.083	.405	Struthers,O. Y1
.049–.083	¾	LosAngeles P2
.049–.083	1 1/16	IndianaHarbor,Ind. Y1
.049–.083	1 1/16	Struthers,O. Y1
.049–.083	1.508	IndianaHarbor,Ind. Y1
.049–.083	1.508	Struthers,O. Y1
.049–.083	3	IndianaHarbor,Ind. Y1
.049–.083	3	Struthers,O. Y1
.049–.095	.540	IndianaHarbor,Ind. Y1
.049–.095	.540	Struthers,O. Y1
.049–.095	1.050	Alton,Ill. L1
.049–.095	1.163	Alton,Ill. L1
.049–.095	1⅛	IndianaHarbor,Ind. Y1
.049–.095	1⅛	Struthers,O. Y1
.049–.095	2	IndianaHarbor,Ind. Y1
.049–.095	2	Struthers,O. Y1
.049–.095	2.197	IndianaHarbor,Ind. Y1
.049–.095	2.197	Struthers,O. Y1
.049–.095	2¼	Shelby,O. O2
.049–.10	1¼	Alton,Ill. L1
.049–.109	½-3	Azusa,Calif. E8
.049–.109	2⅜	Shelby,O. O2
.049–.109	2½	Shelby,O. O2
.049–.112	1⅛	Alton,Ill. L1
.049–.120	1½	Alton,Ill. L1
.049–.120	1.510	Alton,Ill. L1
.049–.120	1.740	Alton,Ill. L1
.049–.120	1⅞	Alton,Ill. L1
.049–.120	2	Alton,Ill. L1
.049–.134	2	Sharon,Pa. S31
.049–.134	2⅛	Sharon,Pa. S31
.049–.134	2⅛	Sharon,Pa. S31
.049–.134	2⅜	Sharon,Pa. S31
.049–.134	2½	Sharon,Pa. S31
.049–.134	2⅛-3	LosAngeles P2
.049–.134	2⅜	Sharon,Pa. S31
.049–.220	2⅜	Warren,O. V4
.065	1/16-⅛	Rome,N.Y. R9
.065	⅛-⅛	Piqua,O. A10
.065	¾	Wheatland,Pa. W9
.065	¾-4	OilCity,Pa. J5
.065	⅞	Wheatland,Pa. W9
.065	1	Wheatland,Pa. W9
.065	1⅛	Wheatland,Pa. W9
.065	1¼	Wheatland,Pa. W9
.065	1⅜	Wheatland,Pa. W9
.065	1½	Wheatland,Pa. W9
.065	1⅝	Wheatland,Pa. W9
.065	1⅝	Wheatland,Pa. W9
.065	1⅝	Wheatland,Pa. W9
.065	1⅝	Wheatland,Pa. W9
.065	2	Wheatland,Pa. W9
.065	2⅛	Wheatland,Pa. W9
.065	2⅛	Wheatland,Pa. W9
.065	2⅜	Wheatland,Pa. W9
.065	2½	Wheatland,Pa. W9
.065	2⅝	Wheatland,Pa. W9
.065	2⅞	Wheatland,Pa. W9
.065	3	Wheatland,Pa. W9
.065–.075	1/16-⅝	Detroit W21
.065–.083	⅝	NorthBirmingham,Ala. S28
.065–.083	⅝-1⅛	Piqua,O. A10
.065–.083	⅝-1⅛	Ferndale,Mich. R2
.065–.083	⅞	NorthBirmingham,Ala. S28
.065–.095	⅞-⅞	Rome,N.Y. R9
.065–.095	⅞	Clinton,Iowa C25
.065–.095	⅞-⅞	Brooklyn,N.Y. R2
.065–.095	⅞-⅞	Cleveland R2
.065–.095	⅞	Clinton,Iowa C25
.065–.095	1-1 1/16	Piqua,O. A10
.065–.095	2⅛	IndianaHarbor,Ind. Y1
.065–.095	2⅛	Struthers,O. Y1
.065–.095	4⅛	Brooklyn,N.Y. R2
.065–.105	1/16-1	Detroit W21
.065–.109	1/16-⅞	Rome,N.Y. R9
.065–.109	1	NorthBirmingham,Ala. S28
.065–.109	1 1/16	NorthBirmingham,Ala. S28
.065–.109	1 1/16	Warren,O. V4
.065–.109	1⅛	NorthBirmingham,Ala. S28
.065–.109	1⅛-3	Piqua,O. A10
.065–.109	2⅛	Shelby,O. O2
.065–.109	3	Shelby,O. O2
.065–.120	⅛-4	Detroit M20
.065–.120	1/16-1 1/16	Rome,N.Y. R9
.065–.120	1	Clinton,Iowa C25
.065–.120	1	Warren,O. V4
.065–.120	1-1⅜	Brooklyn,N.Y. R2
.065–.120	1-1⅜	Cleveland R2
.065–.120	1 1/16-1.40	Warren,O. V4
.065–.120	1⅛	Clinton,Iowa C25
.065–.120	1⅛	Clinton,Iowa C25
.065–.120	1¼-1⅜	Ferndale,Mich. R2
.065–.120	1⅜	Clinton,Iowa C25
.065–.120	2.197	Alton,Ill. L1

MECHANICAL TUBING

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Welded, Round, Hot-Rolled

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.065–.120	2¾	Alton,Ill. I.1
.065–.134	1 7/16-3	Detroit W21
.065–.134	1½	Brooklyn,N.Y. R2
.065–.134	1½	Cleveland R2
.095–.134	1½	Clinton,Iowa C25
.065–.134	1½	NorthBirmingham,Ala. S28
.065–.134	1⅝	NorthBirmingham,Ala. S28
.065–.134	1¾	NorthBirmingham,Ala. S28
.065–.134	1⅞	NorthBirmingham,Ala. S28
.065–.134	2	NorthBirmingham,Ala. S28
.065–.134	2-2⅛	Ferndale,Mich. R2
.065–.134	2¼	NorthBirmingham,Ala. S28
.065–.134	2⅜	NorthBirmingham,Ala. S28
.065–.134	2½	NorthBirmingham,Ala. S28
.065–.134	2⅝	NorthBirmingham,Ala. S28
.065–.134	2¾	Sharon,Pa. S31
.065–.134	2⅞	NorthBirmingham,Ala. S28
.065–.134	2⅞	Sharon,Pa. S31
.065–.134	2.905-2 15/16	Warren,O. V4
.065–.134	3	NorthBirmingham,Ala. S28
.065–.134	3 1/16	Warren,O. V4
.065–.134	3¼-3⅜	Warren,O. V4
.065–.148	1½-1 7/16	Warren,O. V4
.065–.148	1½-2⅛	Rome,N.Y. R9
.065–.148	1⅝-4	Brooklyn,N.Y. R2
.065–.148	2⅜	Ferndale,Mich. R2
.065–.148	2¾	Rome,N.Y. R9
.065–.165	1⅝	Clinton,Iowa C25
.065–.165	1⅝-1 11/16	Warren,O. V4
.065–.165	1⅝-1⅞	Cleveland R2
.065–.165	1⅜	Clinton,Iowa C25
.065–.180	1⅜-2⅝	Warren,O. V4
.065–.180	1⅞	Cleveland R2
.065–.180	1⅞	Clinton,Iowa C25
.065–.1875	2	Clinton,Iowa C25
.065–.1875	2⅛	Clinton,Iowa C25
.065–.1875	2⅛	Clinton,Iowa C25
.065–.1875	2⅜	Clinton,Iowa C25
.065–.1875	2½	Clinton,Iowa C25
.065–.1875	2⅝	Clinton,Iowa C25
.065–.1875	2⅝	Clinton,Iowa C25
.065–.1875	2¾	Clinton,Iowa C25
.065–.1875	3	Clinton,Iowa C25
.065–.1875	3⅛	Clinton,Iowa C25
.065–.1875	3⅛	Clinton,Iowa C25
.065–.1875	3⅜	Clinton,Iowa C25
.065–.1875	3½	Clinton,Iowa C25
.065–.1875	3⅝	Clinton,Iowa C25
.065–.1875	3⅝	Clinton,Iowa C25
.065–.1875	3¾	Clinton,Iowa C25
.065–.1875	3⅞	Clinton,Iowa C25
.065–.1875	4	Clinton,Iowa C25
.065–.1875	4⅛	Clinton,Iowa C25
.065–.1875	4⅛	Clinton,Iowa C25
.065–.1875	4⅜	Clinton,Iowa C25
.065–.1875	4½	Clinton,Iowa C25
.065–.203	2-2⅛	Cleveland R2
.065–.213	⅛-4	Alliance,O. B1
.065–.220	2¼-5	Cleveland R2
.065–.220	2½-2⅝	Rome,N.Y. R9
.065–.220	2⅞	Warren,O. V4
.065–.220	2⅞-4½	Rome,N.Y. R9
.065–.220	3	Sharon,Pa. S31
.065–.220	3	Warren,O. V4
.065–.220	3⅛	Warren,O. V4
.065–.220	3½	Sharon,Pa. S31
.065–.220	3½-6	Warren,O. V4
.065–.238	4	Sharon,Pa. S31
.065–.238	4½	Sharon,Pa. S31
.083	⅝-.665	Warren,O. V4
.083	⅞-4	OilCity,Pa. J5
.083–.095	⅛-⅞	Warren,O. V4
.083–.095	1	Wheatland,Pa. W9
.083–.095	1⅛	Wheatland,Pa. W9
.083–.095	1¼	Wheatland,Pa. W9
.083–.095	1⅜	Wheatland,Pa. W9
.083–.095	1½	Wheatland,Pa. W9
.083–.095	1⅝	Wheatland,Pa. W9
.083–.095	1⅞	Wheatland,Pa. W9
.083–.095	1⅞	Wheatland,Pa. W9
.083–.109	⅛	Warren,O. V4
.083–.120	2	Wheatland,Pa. W9
.083–.134	2⅛	Wheatland,Pa. W9
.083–.134	2¼	Wheatland,Pa. W9
.083–.134	2⅜	Wheatland,Pa. W9
.083–.134	2½	Wheatland,Pa. W9
.083–.134	2⅝	Wheatland,Pa. W9
.083–.134	2⅞	Wheatland,Pa. W9
.083–.134	3	Wheatland,Pa. W9
.083–.220	4 1/16-4⅜	Rome,N.Y. R9
.083–.238	5	Sharon,Pa. S31
.095	.840-4	OilCity,Pa. J5
.109	1-4	OilCity,Pa. J5
.120	1⅛-4	OilCity,Pa. J5
.134	1½-4	OilCity,Pa. J5
.142–.237	4½	Wilder,Ky. N9
.148	2⅜-4	OilCity,Pa. J5
.156–.216	3½	Wilder,Ky. N9
.156–.250	6	Wilder,Ky. N9
.156–.280	6⅝	Wilder,Ky. N9

Welded, Round, Cold-Rolled

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.003–.020	1/16	Sharon,Pa. S31
.004–.028	3/32	Sharon,Pa. S31
.004–.035	⅛	Sharon,Pa. S31
.005–.042	3/16	Sharon,Pa. S31
.005–.049	¼	Sharon,Pa. S31
.005–.049	5/16	Sharon,Pa. S31
.005–.065	⅜	Sharon,Pa. S31
.007–.065	7/16	Sharon,Pa. S31
.007–.065	½	Sharon,Pa. S31
.010–.065	9/16	Sharon,Pa. S31
.010–.065	⅝	Sharon,Pa. S31
.015–.042	¼-½	Detroit W21
.015–.050	3/16-⅝	Detroit W21
.015–.065	⅝	Sharon,Pa. S31
.018–.083	¼-⅝	Detroit W21
.018–.109	⅜-2	SinkingSpring,Pa. H8
.018–.120	¼-⅞	Detroit W21
.020–.065	⅞	Sharon,Pa. S31
.022	⅜-⅞	OilCity,Pa. J5
.022–.180	¼-4	Detroit M20
.024–.120	¼	Detroit W21
.025–.180	½-4	Warren,O. B9
.028	⅜-1 7/16	OilCity,Pa. J5
.028	½	Wheatland,Pa. W9
.028	⅝	Wheatland,Pa. W9
.028	¾	Wheatland,Pa. W9
.028	⅞	Wheatland,Pa. W9
.028	1	Wheatland,Pa. W9
.028	1⅛	Wheatland,Pa. W9
.028	1¼	Wheatland,Pa. W9
.028	1⅜	Wheatland,Pa. W9
.028–.035	3/16	Rochester,Mich. A23
.028–.035	7/32	Rochester,Mich. A23
.028–.042	¼	Rochester,Mich. A23
.028–.042	5/16	Rochester,Mich. A23
.028–.042	⅜	Rochester,Mich. A23
.028–.042	7/16	Rochester,Mich. A23
.028–.042	½	Rochester,Mich. A23
.028–.049	¼-7/16	Piqua,O. A10
.028–.049	⅝	Brooklyn,N.Y. R2
.028–.049	⅝	Ferndale,Mich. R2
.028–.049	½	Gary,Ind. N3
.028–.049	½	Rochester,Mich. A23
.028–.049	½	Shelby,O. O2
.028–.049	11/16	Shelby,O. O2
.028–.049	7/16	Rochester,Mich. A23
.028–.049	⅝	Rochester,Mich. A23
.028–.065	1/16-1	Hometown,Pa. B13
.028–.065	⅛-½	Rome,N.Y. R9
.028–.065	⅛	Brooklyn,N.Y. R2
.028–.065	⅛-1 1/16	Piqua,O. A10
.028–.065	⅝	Ferndale,Mich. R2
.028–.065	⅝	Gary,Ind. N3
.028–.065	⅝	Shelby,O. O2
.028–.065	⅝	Toledo,O. T8
.028–.065	⅝	Shelby,O. O2
.028–.065	11/16	Shelby,O. O2
.028–.065	⅞	Sharon,Pa. S31
.028–.065	1	Sharon,Pa. S31
.028–.065	1⅛	Sharon,Pa. S31
.028–.083	¼-2	Evanston,Ill. M15
.028–.083	⅜-½	Cleveland R2
.028–.083	½	Clinton,Iowa C25
.028–.083	⅝-.665	Warren,O. V4
.028–.083	⅝	Sharon,Pa. S31
.028–.083	⅜-⅝	Gary,Ind. N3
.028–.083	⅝-⅞	Piqua,O. A10
.028–.083	¾-1 1/16	Ferndale,Mich. R2
.028–.083	¾-1⅛	Toledo,O. T8
.028–.083	⅞	Shelby,O. O2
.028–.083	1	Shelby,O. O2
.028–.083	1¼	Shelby,O. O2
.028–.083	1⅛	Shelby,O. O2
.028–.083	1⅜	Shelby,O. O2
.028–.083	1 7/16	Shelby,O. O2
.028–.083	1½	Shelby,O. O2
.028–.095	3/16-⅝	Rome,N.Y. R9
.028–.095	⅜	Clinton,Iowa C25
.028–.095	⅝	Brooklyn,N.Y. R2
.028–.095	⅝-⅞	Cleveland R2
.028–.095	1/16-⅞	Warren,O. V4
.028–.095	⅞	Clinton,Iowa C25
.028–.095	⅞	Clinton,Iowa C25
.028–.095	1-1⅛	Gary,Ind. N3
.028–.095	1-1 7/16	Piqua,O. A10
.028–.095	1⅝	Shelby,O. O2
.028–.109	⅛-3	Azusa,Calif. E8
.028–.109	1/16-⅝	Rome,N.Y. R9
.028–.109	1/16	Warren,O. V4
.028–.109	1 1/16	Warren,O. V4
.028–.109	1¼-1⅜	Gary,Ind. N3
.028–.109	1⅜-2	Piqua,O. A10
.028–.120	1/16-1 7/16	Rome,N.Y. R9
.028–.120	1	Clinton,Iowa C25
.028–.120	1	Sharon,Pa. S31
.028–.120	1	Warren,O. V4
.028–.120	1 1/16	Brooklyn,N.Y. R2
.028–.120	1-1⅛	Cleveland R2
.028–.120	1-1⅜	Warren,O. V4
.028–.120	1 7/16-1.40	Warren,O. V4
.028–.120	1⅛	Clinton,Iowa C25
.028–.120	1⅛	Clinton,Iowa C25
.028–.120	1⅛	Clinton,Iowa C25
.028–.134	1¼	Sharon,Pa. S31
.028–.134	1 7/16	Sharon,Pa. S31
.028–.134	1⅜	Sharon,Pa. S31
.028–.134	1½-1 7/16	Warren,O. V4
.028–.134	1½-1⅝	Gary,Ind. N3
.028–.148	1½	Rome,N.Y. R9
.028–.213	⅛-4	Alliance,O. B1
.028–.220	½-4	Chicago N11
.028–.260	⅜-5½	Detroit S14
.030–.120	1	Detroit W21
.032–.109	1-1¼	LosAngeles P2
.032–.120	1¼-1½	LosAngeles P2
.032–.134	1 7/16-1 11/16	Detroit W21
.032–.148	1 7/16-2	Rome,N.Y. R9
.034–.134	1⅜-1 11/16	Detroit W21
.035	⅜-4	OilCity,Pa. J5
.035	½	Wheatland,Pa. W9
.035	⅝	Wheatland,Pa. W9
.035	¾	Wheatland,Pa. W9
.035	⅞	Wheatland,Pa. W9
.035	1	Wheatland,Pa. W9
.035	1⅛	Wheatland,Pa. W9
.035	1¼	Wheatland,Pa. W9
.035	1⅜	Wheatland,Pa. W9
.035	1½	Wheatland,Pa. W9
.035	1⅝	Wheatland,Pa. W9
.035	1⅝	Wheatland,Pa. W9
.035	1⅞	Wheatland,Pa. W9
.035	2	Wheatland,Pa. W9
.035	2⅛	Wheatland,Pa. W9
.035	2¼	Wheatland,Pa. W9
.035–.049	½	Sharon,Pa. S31
.035–.065	½	IndianaHarbor,Ind. Y1
.035–.065	½	Struthers,O. Y1
.035–.065	½	Warren,O. V4
.035–.065	⅝	IndianaHarbor,Ind. Y1
.035–.065	⅝	Struthers,O. Y1
.035–.065	.706	IndianaHarbor,Ind. Y1
.035–.065	.706	Struthers,O. Y1
.035–.065	⅞	Wallingford,Conn. W2
.035–.065	⅞-3	Sturgis,Mich. F10
.035–.065	.840	Sharon,Pa. S31
.035–.065	1⅛	Sharon,Pa. S31

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

○ Welded, Round, Cold-Rolled

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.035-.065	1¼	Sharon,Pa. S31
.035-.065	1⅜	Sharon,Pa. S31
.035-.083	½	NorthBirmingham,Ala. S28
.035-.083	⅝	NorthBirmingham,Ala. S28
.035-.083	¾	IndianaHarbor,Ind. Y1
.035-.083	⅞	NorthBirmingham,Ala. S28
.035-.083	⅞	Struthers,O. Y1
.035-.083	⅞	IndianaHarbor,Ind. Y1
.035-.083	⅞	LosAngeles P2
.035-.083	⅞	NorthBirmingham,Ala. S28
.035-.083	⅞	Struthers,O. Y1
.035-.083	⅞	Wallingford,Conn. W2
.035-.083	15/16	IndianaHarbor,Ind. Y1
.035-.083	15/16	Struthers,O. Y1
.035-.083	1	IndianaHarbor,Ind. Y1
.035-.083	1	NorthBirmingham,Ala. S28
.035-.083	1	Struthers,O. Y1
.035-.083	1	Wallingford,Conn. W2
.035-.083	1 1/16	NorthBirmingham,Ala. S28
.035-.083	1⅛	NorthBirmingham,Ala. S28
.035-.083	1⅛	NorthBirmingham,Ala. S28
.035-.083	1⅛	Sharon,Pa. S31
.035-.083	1⅛	NorthBirmingham,Ala. S28
.035-.083	1¼	NorthBirmingham,Ala. S28
.035-.083	1⅜	NorthBirmingham,Ala. S28
.035-.083	2	NorthBirmingham,Ala. S28
.035-.083	2¼	NorthBirmingham,Ala. S28
.035-.095	1½-1⅝	Toledo,O. T8
.035-.095	1 11/16	Shelby,O. O2
.035-.095	1¾	Sharon,Pa. S31
.035-.095	1¾	Shelby,O. O2
.035-.095	1⅞	Shelby,O. O2
.035-.095	2	Shelby,O. O2
.035-.095	2⅛	Shelby,O. O2
.035-.095	2 1/16	Shelby,O. O2
.035-.105	1¼	Wallingford,Conn. W2
.035-.109	1⅜	Wallingford,Conn. W2
.035-.109	1⅜	Wallingford,Conn. W2
.035-.109	1⅜-1⅝	Toledo,O. T8
.035-.109	2 1/16-2½	Piqua,O. A10
.035-.120	1¼-1⅞	Ferndale,Mich. R2
.035-.120	1⅛	Clinton,Iowa C25
.035-.120	1⅜	Clinton,Iowa C25
.035-.120	1⅜-1⅞	LosAngeles P2
.035-.120	1⅜	Clinton,Iowa C25
.035-.120	1⅜	Clinton,Iowa C25
.035-.120	2	Clinton,Iowa C25
.035-.120	2	Wallingford,Conn. W2
.035-.120	2-3⅛	Toledo,O. T8
.035-.120	2⅛	Clinton,Iowa C25
.035-.120	2¼	Clinton,Iowa C25
.035-.125	⅝-3	Brooklyn,N.Y. U10
.035-.134	1½	Sharon,Pa. S31
.035-.134	1½-2⅛	Brooklyn,N.Y. R2
.035-.134	1½-2⅛	Cleveland R2
.035-.134	1⅝	Sharon,Pa. S31
.035-.134	1⅝-2⅜	Warren,O. V4
.035-.134	1⅝	Gary,Ind. N3
.035-.134	1⅞-2	Gary,Ind. N3
.035-.134	2	LosAngeles P2
.035-.148	2 1/16-2⅜	Rome,N.Y. R9
.035-.148	2⅜	Rome,N.Y. R9
.035-.220	2½-2⅝	Rome,N.Y. R9
.035-.220	2⅝	Rome,N.Y. R9
.036-.134	2-2 1/16	Detroit W21
.038-.134	2⅛-2⅜	Detroit W21
.042-.083	1½	IndianaHarbor,Ind. Y1
.042-.083	1½	Struthers,O. Y1
.042-.083	1.163	IndianaHarbor,Ind. Y1
.042-.083	1.163	Struthers,O. Y1
.042-.083	1¼	IndianaHarbor,Ind. Y1
.042-.083	1¼	Struthers,O. Y1
.042-.083	1⅜	IndianaHarbor,Ind. Y1
.042-.083	1⅜	Struthers,O. Y1
.042-.083	1.738	IndianaHarbor,Ind. Y1
.042-.083	1.738	Struthers,O. Y1
.042-.095	1½	IndianaHarbor,Ind. Y1
.042-.095	1½	Struthers,O. Y1
.042-.109	2⅜-3	Piqua,O. A10
.042-.133	3	Wallingford,Conn. W2
.042-.134	2⅛-2½	Gary,Ind. N3
.042-.134	2½-3	Detroit W21
.042-.134	2½-3 1/16	Warren,O. V4
.042-.220	3-3¼	Rome,N.Y. R9
.049	⅜-4	OilCity,Pa. J5
.049	½	Wheatland,Pa. W9
.049	⅝	Wheatland,Pa. W9
.049	¾	Wheatland,Pa. W9
.049	⅞	Wheatland,Pa. W9
.049	1	Wheatland,Pa. W9
.049	1⅛	Wheatland,Pa. W9
.049	1¼	Wheatland,Pa. W9
.049	1⅜	Wheatland,Pa. W9
.049	1½	Wheatland,Pa. W9
.049	1⅝	Wheatland,Pa. W9
.049	1¾	Wheatland,Pa. W9
.049	1⅞	Wheatland,Pa. W9
.049	2	Wheatland,Pa. W9
.049	2¼	Wheatland,Pa. W9
.049	2¼	Wheatland,Pa. W9
.049	2⅜	Wheatland,Pa. W9
.049	2½	Wheatland,Pa. W9
.049	2⅝	Wheatland,Pa. W9
.049	2⅞	Wheatland,Pa. W9
.049	3	Wheatland,Pa. W9
.049-.065	17/32	IndianaHarbor,Ind. Y1
.049-.065	17/32	Struthers,O. Y1
.049-.065	1.90	Sharon,Pa. S31
.049-.083	.405	IndianaHarbor,Ind. Y1
.049-.083	.405	Struthers,O. Y1
.049-.083	⅜	LosAngeles P2
.049-.083	1 1/16	IndianaHarbor,Ind. Y1
.049-.083	1 1/16	Struthers,O. Y1
.049-.083	1.508	IndianaHarbor,Ind. Y1
.049-.083	1.508	Struthers,O. Y1
.049-.083	2⅛	NorthBirmingham,Ala. S28
.049-.083	2½	NorthBirmingham,Ala. S28
.049-.083	2⅝	NorthBirmingham,Ala. S28
.049-.083	2⅞	NorthBirmingham,Ala. S28
.049-.083	2⅞	NorthBirmingham,Ala. S28
.049-.083	3	IndianaHarbor,Ind. Y1
.049-.083	3	NorthBirmingham,Ala. S28
.049-.083	3	Struthers,O. Y1
.049-.095	1/16	Adrian,Mich. S2
.049-.095	.540	IndianaHarbor,Ind. Y1
.049-.095	.540	Struthers,O. Y1
.049-.095	1¾	IndianaHarbor,Ind. Y1
.049-.095	1¾	Struthers,O. Y1
.049-.095	2	IndianaHarbor,Ind. Y1
.049-.095	2	Struthers,O. Y1
.049-.095	2.197	IndianaHarbor,Ind. Y1
.049-.095	2.197	Struthers,O. Y1
.049-.095	2¼	Shelby,O. O2
.049-.109	2⅜	Shelby,O. O2
.049-.109	2½	Shelby,O. O2
.049-.120	⅝-1/16	Adrian,Mich. S2
.049-.120	2⅛	Clinton,Iowa C25
.049-.120	2½	Clinton,Iowa C25
.049-.120	2⅝	Clinton,Iowa C25
.049-.120	2⅝	Clinton,Iowa C25
.049-.120	2¾	Clinton,Iowa C25
.049-.120	3	Clinton,Iowa C25
.049-.120	3⅛	Clinton,Iowa C25
.049-.120	3¼	Clinton,Iowa C25
.049-.120	3⅜	Clinton,Iowa C25
.049-.120	3½	Clinton,Iowa C25
.049-.120	3¾	Clinton,Iowa C25
.049-.120	3⅞	Clinton,Iowa C25
.049-.120	4	Clinton,Iowa C25
.049-.134	⅝-1⅛	Adrian,Mich. S2
.049-.134	2	Sharon,Pa. S31
.049-.134	2-2⅜	Ferndale,Mich. R2
.049-.134	2⅛	Sharon,Pa. S31
.049-.134	2¼	Sharon,Pa. S31
.049-.134	2⅜	Sharon,Pa. S31
.049-.134	2⅜-2⅝	Gary,Ind. N3
.049-.134	2⅜-4	Brooklyn,N.Y. R2
.049-.134	2⅝-4	Cleveland R2
.049-.134	2½	Sharon,Pa. S31
.049-.134	2½-2⅝	Warren,O. V4
.049-.134	2½-3	LosAngeles P2
.049-.134	2⅝	Sharon,Pa. S31
.049-.134	3⅛-3¼	Warren,O. V4
.049-.203	3	Gary,Ind. N3
.049-.220	3⅛-4	Rome,N.Y. R9
.065	⅛-4	OilCity,Pa. J5
.065	⅝	Wheatland,Pa. W9
.065	⅞	Wheatland,Pa. W9
.065	⅞	Wheatland,Pa. W9
.065	1	Wheatland,Pa. W9
.065	1⅛	Wheatland,Pa. W9
.065	1¼	Wheatland,Pa. W9
.065	1⅜	Wheatland,Pa. W9
.065	1⅜	Wheatland,Pa. W9
.065	1½	Wheatland,Pa. W9
.065	1⅝	Wheatland,Pa. W9
.065	1¾	Wheatland,Pa. W9
.065	2	Wheatland,Pa. W9
.065	2⅛	Wheatland,Pa. W9
.065	2¼	Wheatland,Pa. W9
.065	2⅜	Wheatland,Pa. W9
.065	2½	Wheatland,Pa. W9
.065	2⅝	Wheatland,Pa. W9
.065	2⅞	Wheatland,Pa. W9
.065	3	Wheatland,Pa. W9
.065-.095	2¼	IndianaHarbor,Ind. Y1
.065-.095	2⅛	Struthers,O. Y1
.065-.095	4⅛	Brooklyn,N.Y. R2
.065-.109	2⅝	Shelby,O. O2
.065-.109	3	Shelby,O. O2
.065-.120	4⅛	Clinton,Iowa C25
.065-.120	4¼	Clinton,Iowa C25
.065-.120	4⅝	Clinton,Iowa C25
.065-.120	4½	Clinton,Iowa C25
.065-.134	1-1 7/16	Adrian,Mich. S2
.065-.134	2⅜	Sharon,Pa. S31
.065-.134	2⅞	Sharon,Pa. S31
.065-.134	3⅝-6	Warren,O. V4
.065-.134	4½-5	Cleveland R2
.065-.203	3¼	Gary,Ind. N3
.065-.220	3	Sharon,Pa. S31
.065-.220	3½	Gary,Ind. N3
.065-.220	3½	Sharon,Pa. S31
.065-.220	4¼-4½	Rome,N.Y. R9
.065-.238	4	Gary,Ind. N3
.065-.238	4	Sharon,Pa. S31
.065-.238	4½	Sharon,Pa. S31
.083	⅝	Wheatland,Pa. W9
.083	¾-4	OilCity,Pa. J5
.083	⅞	Wheatland,Pa. W9
.083-.095	1	Wheatland,Pa. W9
.083-.095	1⅛	Wheatland,Pa. W9
.083-.095	1¼	Wheatland,Pa. W9
.083-.095	1⅜	Wheatland,Pa. W9
.083-.095	1½	Wheatland,Pa. W9
.083-.095	1⅝	Wheatland,Pa. W9
.083-.095	1⅝	Wheatland,Pa. W9
.083-.095	1⅞	Wheatland,Pa. W9
.083-.120	½	Monaca,Pa. P9
.083-.120	2	Wheatland,Pa. W9
.083-.120	2⅛	Wheatland,Pa. W9
.083-.120	2¼	Wheatland,Pa. W9
.083-.120	2⅜	Wheatland,Pa. W9
.083-.120	2½	Wheatland,Pa. W9
.083-.120	2¾	Wheatland,Pa. W9
.083-.120	2⅞	Wheatland,Pa. W9
.083-.120	3	Wheatland,Pa. W9
.083-.125	1/16	Monaca,Pa. P9
.083-.134	⅝	Monaca,Pa. P9
.083-.134	1¼-1⅝	Adrian,Mich. S2
.083-.156	1 1/16	Monaca,Pa. P9
.083-.180	⅝	Monaca,Pa. P9
.083-.188	1 1/16-⅞	Monaca,Pa. P9
.083-.220	1 1/16	Monaca,Pa. P9
.083-.220	4 1/16-4⅝	Rome,N.Y. R9
.083-.238	5	Sharon,Pa. S31
.083-.250	1-1⅛	Monaca,Pa. P9
.095	⅜-4	OilCity,Pa. J5
.095-.280	1 1/16-1⅛	Monaca,Pa. P9
.095-.30	1 1/16-1⅛	Monaca,Pa. P9
.109	1-4	OilCity,Pa. J5
.110-.320	1 1/16-1⅝	Monaca,Pa. P9
.120	1¼-4	OilCity,Pa. J5
.120-.340	1 1/16-1⅝	Monaca,Pa. P9
.120-.360	1 1/16-2	Monaca,Pa. P9
.125-.375	2 1/16-2¼	Monaca,Pa. P9
.134	1½-4	OilCity,Pa. J5
.148-.375	2 1/16-2 7/16	Monaca,Pa. P9
.156-.375	2⅛-2⅝	Monaca,Pa. P9
.180-.375	2 1/16	Monaca,Pa. P9
.203-.375	2⅝-2 1/16	Monaca,Pa. P9
.220-.375	2⅞-2 1/16	Monaca,Pa. P9

MECHANICAL TUBING

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Welded, Rectangular, Hot-Rolled

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.028-.180	⅝ x ⅜-4x4 ½	Detroit S14
.028-.220	½-4	Chicago N11
.035-.120	¾ x1 ¾	Rome,N.Y. R9
.049-.083	1	Sharon,Pa. S31
.049-.083	1 ¼	Sharon,Pa. S31
.049-.083	1 ½	Sharon,Pa. S31
.049-.083	1 ½	Sharon,Pa. S31
.049-.083	2	Sharon,Pa. S31
.065	⅝ x1 ¼	Rome,N.Y. R9
.065	⅝ x1 ½ to ⅝ x⅝	Warren,O. V4
.065	½ x1 to 2x3	OilCity,Pa. J5
.065-.083	⅝ x1 to ⅝ x2⅝	Warren,O. V4
.065-.083	½ x⅝	Rome,N.Y. R9
.065-.083	½ x1 to ⅝ x1 ½	Warren,O. V4
.065-.083	⅝ x⅝	Rome,N.Y. R9
.065-.083	1/16 x1 1/16	Warren,O. V4
.065-.095	½ x1-1 ¼	Rome,N.Y. R9
.065-.095	⅝ x⅝-1 ⅜	Rome,N.Y. R9
.065-.095	⅝ x1-1 ¼	Rome,N.Y. R9
.065-.095	⅝ x1 ½	Rome,N.Y. R9
.065-.095	1x1 ¼	Rome,N.Y. R9
.065-.109	⅝ x2	Warren,O. V4
.065-.109	⅝ x1 ⅜ to 1x1 ⅜	Warren,O. V4
.065-.120	½ x2-2 ½	Rome,N.Y. R9
.065-.120	⅝ x1 ½-2 ½	Rome,N.Y. R9
.065-.120	⅝ x2-2 ½	Rome,N.Y. R9
.065-.120	⅞-2 ⅝	Detroit M20
.065-.120	⅞ x1 ½-2 ¼	Rome,N.Y. R9
.065-.120	1x1 ¼-2 ⅜	Rome,N.Y. R9
.065-.120	1x1 ½	Warren,O. V4
.065-.120	1 ⅛ x1 ¼-2 ⅜	Rome,N.Y. R9
.065-.120	1 ¼ x1 ½-2 ¼	Rome,N.Y. R9
.065-.134	1x3	Rome,N.Y. R9
.065-.134	1 ¼ x3	Rome,N.Y. R9
.065-.134	1 ¼ x1 ⅝	Warren,O. V4
.065-.134	1 ¼ x2 ½-3	Rome,N.Y. R9
.065-.134	1 ⅜ x1 ½-3	Rome,N.Y. R9
.065-.134	1 ⅜ x1 ¾-3	Rome,N.Y. R9
.065-.134	1 ½ x2-3	Rome,N.Y. R9
.065-.134	2 ½ x3	Warren,O. V4
.065-.148	1x2 to 1x2 ½	Warren,O. V4
.065-.148	1 1/16 x1 ⅛ to 1 ½ x2	Warren,O. V4
.065-.148	1 ⅝ x2 ¼ to 1 ½ x2	Warren,O. V4
.065-.148	1 ⅝ x3	Warren,O. V4
.065-.187	2x2 ¼-3	Rome,N.Y. R9
.065-.187	2 ¼ x2 ½-3	Rome,N.Y. R9
.065-.187	2 ½ x2 ⅝-3	Rome,N.Y. R9
.065-.20	Peripheries of 3" to 16" incl.	Brooklyn,N.Y. R2
.065-.20	Peripheries of 3" to 16" incl.	Cleveland R2
.065-.220	1x3 ½	Warren,O. V4
.065-.220	1 ½ x3 to 1 ½ x3 ½	Warren,O. V4
.065-.220	2x3 to 2x5 ½	Warren,O. V4
.065-.220	3x4	Warren,O. V4
.083	1 ¼ x1 ½ to 2x3	OilCity,Pa. J5
.095	1 ¼ x1 ½ to 2x3	OilCity,Pa. J5
.109	1 ¼ x2 ½ to 2x3	OilCity,Pa. J5
.120	2x3	OilCity,Pa. J5
.134	2x3	OilCity,Pa. J5
Check with mill for sizes		LosAngeles P2
Check with mill for sizes		Piqua,O. A10
Check with mill for sizes		Shelby,O. O2

Welded, Rectangular, Cold-Rolled

Wall Thickness (inches)	Outside Dimensions (inches)	Mill Point, Producer
.028-.065	⅛ x1 ¼	Rome,N.Y. R9
.028-.065	⅜ x⅜	Shelby,O. O2
.028-.065	⅝ x1	Shelby,O. O2
.028-.065	½ x1	Shelby,O. O2
.028-.065	½ x1 ¼	Shelby,O. O2
.028-.065	½ x1 ½	Shelby,O. O2
.028-.065	⅝ x1 ½	Shelby,O. O2
.028-.065	¾ x1	Shelby,O. O2
.028-.065	¾ x1 ¼	Shelby,O. O2
.028-.083	½ x⅝	Rome,N.Y. R9
.028-.083	⅝ x⅝	Rome,N.Y. R9
.028-.095	½ x1-1 ⅜	Rome,N.Y. R9
.028-.095	⅝ x⅝-1 ⅜	Rome,N.Y. R9
.028-.095	⅝ x1-1 ¼	Rome,N.Y. R9
.028-.095	⅝ x1 ⅛	Rome,N.Y. R9
.028-.134	Peripheries of 1" to 16" incl.	Brooklyn,N.Y. R2
.028-.134	Peripheries of 1" to 16" incl.	Cleveland R2
.028-.180	⅝ x⅜ to 4x4 ½	Detroit S14
.028-.220	½-4	Chicago N11
.035	.418x1.622	Warren,O. V4
.035	½ x1 to 1 ¼ x1 ½	OilCity,Pa. J5
.035	½-2	Detroit M20
.035-.065	.263x.760 to ⅝ x⅝	Warren,O. V4
.035-.065	1 1/16 x1 1/16	Warren,O. V4
.035-.065	⅝ x2	Shelby,O. O2
.035-.065	⅝ x1 ½	Shelby,O. O2
.035-.065	⅝ x1 ⅝	Shelby,O. O2
.035-.065	⅝ x2	Shelby,O. O2
.035-.065	1x1 ¼	Shelby,O. O2
.035-.085	1x1 ½	Shelby,O. O2
.035-.085	1x1 ⅝	Shelby,O. O2
.035-.065	1x2	Shelby,O. O2
.035-.065	1 ¼ x1 ½	Shelby,O. O2
.035-.065	1 ¼ x1 ⅝	Shelby,O. O2
.035-.065	1 ⅝ x2	Shelby,O. O2
.035-.083	⅝ x1 to ⅝ x2⅝	Warren,O. V4
.035-.083	½ x1 to ⅝ x1 ½	Warren,O. V4
.035-.083	1/16 x1 1/16	Warren,O. V4
.035-.095	1x1 ¼	Rome,N.Y. R9
.035-.109	⅝ x2	Warren,O. V4
.035-.109	⅝ x1 ⅜ to 1x1 ⅜	Warren,O. V4
.035-.120	½ x2-2 ½	Rome,N.Y. R9
.035-.120	⅝ x1 ⅜-2 ½	Rome,N.Y. R9
.035-.120	⅝ x1 ½-2 ¼	Rome,N.Y. R9
.035-.120	1x1 ¼-2 ⅜	Rome,N.Y. R9
.035-.120	1x1 ½	Warren,O. V4
.035-.120	1 ⅛ x1 ¼-2 ⅜	Rome,N.Y. R9
.035-.120	1 ¼ x1 ½-2 ¼	Rome,N.Y. R9
.035-.134	1x2 to 1x2 ½	Warren,O. V4
.035-.134	1x3	Rome,N.Y. R9
.035-.134	1 1/32 x1 21/32 to 1 ½ x1 ⅝	Warren,O. V4
.035-.134	1 ⅛ x3	Rome,N.Y. R9
.035-.134	1 ½ x2	Warren,O. V4
.049	½ x1 to ⅝ x2	OilCity,Pa. J5
.049	11/32 x1 21/32	Warren,O. V4
.049-.065	1x2 ½	Shelby,O. O2
.049-.065	1x3	Shelby,O. O2
.049-.065	1 ⅛ x2 ½	Shelby,O. O2
.049-.083	1	Sharon,Pa. S31
.049-.083	1 ⅛	Sharon,Pa. S31
.049-.083	1 ½	Sharon,Pa. S31
.049-.083	2	Sharon,Pa. S31
.049-.120	1-2 ⅝	Detroit M20
.049-.134	1x3 ½	Warren,O. V4
.049-.134	1 ¼ x2 ½-3	Rome,N.Y. R9
.049-.134	1 ⅜ x1 ½-3	Rome,N.Y. R9
.049-.134	1 ⅜ x2 ¼	Warren,O. V4
.049-.134	1 ½ x1 ¾-3	Rome,N.Y. R9
.049-.134	1 ½ x3	Warren,O. V4
.049-.134	1 ⅝ x2-2 ⅜	Rome,N.Y. R9
.049-.134	1 ¾ x3	Warren,O. V4
.049-.187	2x2 ¼-2 ½	Rome,N.Y. R9
.065	½ x1 to 2x3	OilCity,Pa. J5
.065	1 ¼ x3	Shelby,O. O2
.065	1 ½ x2	Shelby,O. O2
.065	1 ½ x2 ½	Sheiby,O. O2
.065	1 ½ x2 ⅝	Shelby,O. O2
.065-.134	1 ½ x3 ½	Warren,O. V4
.065-.134	1 ⅝ x3	Rome,N.Y. R9
.065-.134	2x3 to 3x4	Warren,O. V4
.065-.187	2x2 ¾-3	Rome,N.Y. R9
.065-.187	2 ¼ x2 ½-3	Rome,N.Y. R9
.065-.187	2 ½ x2 ⅝-3	Rome,N.Y. R9
.083	1 ¼ x1 ½ to 2x3	OilCity,Pa. J5
.095	1 ¼ x1 ½ to 2x3	OilCity,Pa. J5
.109	1 ¼ x2 ½ to 2x3	OilCity,Pa. J5
.120	2x3	OilCity,Pa. J5
.134	2x3	OilCity,Pa. J5
Check with mill for sizes		LosAngeles P2
Check with mill for sizes		Piqua,O. A10

Pressure Tubing

Range of O.D. (inches)	Mill Point, Producer
⅛-1 ¼	Norristown,Pa. S22
⅛-1 ⅜	Adrian,Mich. S2
3/16-⅝	Rochester,Mich. A23
1/10-3	SouthLyon,Mich. M7
¼-1	Pittsburgh S22
¼-2	Evanston,Ill. M15
¼-3	Detroit W21
¼-8⅝	Gary,Ind. N3
¼-10 ¾	EllwoodCity,Pa. N3
⅝-4 ½	Brooklyn,N.Y. R2
⅝-5	Cleveland R2
½-3	Shelby,O. O2
½-4	Alliance,O. B1
½-5 ½	Detroit S14
½-8	Milwaukee G3
½-9⅝	BeaverFalls,Pa. B1
¾-10 ½	Canton,O. T7
⅞-16	Wallington,N.J. T12
2⅝-14	Ambridge,Pa. N2

Rail Steel Tubing

Mill Point, Producer	
ChicagoHts.,Ill.	C2
Elyria,O.	R2

STANDARD PIPE

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Black, Buttweld

Nominal Sizes (inches)	Mill Point, Producer
⅛	Butler, Pa. F6
⅛	Sharon, Pa. S4
⅛-4	Benwood, W.Va. W10
⅛-4	Etna, Pa. N2
¼	Butler, Pa. F6
¼	Sharon, Pa. S4
⅜	Alton, Ill. L1
⅜	Butler, Pa. F6
⅜	Sharon, Pa. S4
½	Aliquippa, Pa. J5
½	Alton, Ill. L1
½	Fontana, Calif. K1
½	IndianaHarbor, Ind. Y1
½	Lorain, O. N3
½	Wheatland, Pa. W9
½	Youngstown R2
½	Youngstown Y1
½-3	Sharon, Pa. S31
½-4	SparrowsPoint, Md. B2
¾	Aliquippa, Pa. J5
¾	Alton, Ill. L1
¾	Fontana, Calif. K1
¾	IndianaHarbor, Ind. Y1
¾	Lorain, O. N3
¾	Wheatland, Pa. W9
¾	Youngstown R2
¾	Youngstown Y1
1	Aliquippa, Pa. J5
1	Alton, Ill. L1
1	Fontana, Calif. K1
1	IndianaHarbor, Ind. Y1
1	Lorain, O. N3
1	Wheatland, Pa. W9
1	Youngstown R2
1	Youngstown Y1
1 ¼	Aliquippa, Pa. J5
1 ¼	Alton, Ill. L1
1 ¼	Fontana, Calif. K1
1 ¼	IndianaHarbor, Ind. Y1
1 ¼	Lorain, O. N3
1 ¼	Wheatland, Pa. W9
1 ¼	Youngstown R2
1 ¼	Youngstown Y1
1 ½	Aliquippa, Pa. J5
1 ½	Alton, Ill. L1
1 ½	Fontana, Calif. K1
1 ½	IndianaHarbor, Ind. Y1
1 ½	Lorain, O. N3
1 ½	Wheatland, Pa. W9
1 ½	Youngstown R2
1 ½	Youngstown Y1
2	Aliquippa, Pa. J5
2	Alton, Ill. L1
2	Fontana, Calif. K1
2	IndianaHarbor, Ind. Y1
2	Lorain, O. N3
2	Wheatland, Pa. W9
2	Youngstown R2
2	Youngstown Y1
2 ½	Aliquippa, Pa. J5
2 ½	Alton, Ill. L1
2 ½	Fontana, Calif. K1
2 ½	IndianaHarbor, Ind. Y1
2 ½	Lorain, O. N3
2 ½	Wheatland, Pa. W9
2 ½	Youngstown R2
2 ½	Youngstown Y1
3	Aliquippa, Pa. J5
3	Alton, Ill. L1
3	Fontana, Calif. K1
3	IndianaHarbor, Ind. Y1
3	Lorain, O. N3
3	Wheatland, Pa. W9
3	Youngstown R2
3	Youngstown Y1
3 ½	Alton, Ill. L1
3 ½	Fontana, Calif. K1
3 ½	IndianaHarbor, Ind. Y1
3 ½	Youngstown R2
4	Alton, Ill. L1
4	Fontana, Calif. K1
4	IndianaHarbor, Ind. Y1
4	Youngstown R2

Galvanized, Buttweld

Nominal Sizes (inches)	Mill Point, Producer
⅛	Butler, Pa. F6
⅛	Sharon, Pa. S4
⅛-4	Benwood, W.Va. W10
⅛-4	Etna, Pa. N2
¼	Butler, Pa. F6
¼	Sharon, Pa. S4
⅜	Alton, Ill. L1
⅜	Butler, Pa. F6
⅜	Sharon, Pa. S4
½	Aliquippa, Pa. J5
½	Alton, Ill. L1
½	Fontana, Calif. K1
½	IndianaHarbor, Ind. Y1
½	Lorain, O. N3
½	Wheatland, Pa. W9
½	Youngstown R2
½	Youngstown Y1
½-3	Sharon, Pa. S31
½-4	SparrowsPoint, Md. B2
¾	Aliquippa, Pa. J5
¾	Alton, Ill. L1
¾	Fontana, Calif. K1
¾	IndianaHarbor, Ind. Y1
¾	Lorain, O. N3
¾	Wheatland, Pa. W9
¾	Youngstown R2
¾	Youngstown Y1
1	Aliquippa, Pa. J5
1	Alton, Ill. L1
1	Fontana, Calif. K1
1	IndianaHarbor, Ind. Y1
1	Lorain, O. N3
1	Wheatland, Pa. W9
1	Youngstown R2
1	Youngstown Y1
1 ¼	Aliquippa, Pa. J5
1 ¼	Alton, Ill. L1
1 ¼	Fontana, Calif. K1
1 ¼	IndianaHarbor, Ind. Y1
1 ¼	Lorain, O. N3
1 ¼	Wheatland, Pa. W9
1 ¼	Youngstown R2
1 ¼	Youngstown Y1
1 ½	Aliquippa, Pa. J5
1 ½	Alton, Ill. L1
1 ½	Fontana, Calif. K1
1 ½	IndianaHarbor, Ind. Y1
1 ½	Lorain, O. N3
1 ½	Wheatland, Pa. W9
1 ½	Youngstown R2
1 ½	Youngstown Y1
2	Aliquippa, Pa. J5
2	Alton, Ill. L1
2	Fontana, Calif. K1
2	IndianaHarbor, Ind. Y1
2	Lorain, O. N3
2	Wheatland, Pa. W9
2	Youngstown R2
2	Youngstown Y1
2 ½	Aliquippa, Pa. J5
2 ½	Alton, Ill. L1
2 ½	Fontana, Calif. K1
2 ½	IndianaHarbor, Ind. Y1
2 ½	Lorain, O. N3
2 ½	Wheatland, Pa. W9
2 ½	Youngstown R2
2 ½	Youngstown Y1
3	Aliquippa, Pa. J5
3	Alton, Ill. L1
3	Fontana, Calif. K1
3	IndianaHarbor, Ind. Y1
3	Lorain, O. N3
3	Wheatland, Pa. W9
3	Youngstown R2
3	Youngstown Y1
3 ½	Alton, Ill. L1
3 ½	Fontana, Calif. K1
3 ½	IndianaHarbor, Ind. Y1
3 ½	Youngstown R2
4	Alton, Ill. L1
4	Fontana, Calif. K1
4	IndianaHarbor, Ind. Y1
4	Youngstown R2

Black, Electricweld

Nominal Sizes (inches)	Mill Point, Producer
2	LoneStar, Tex. L6
2	Youngstown R2
2 ½	LoneStar, Tex. L6
2 ½	Youngstown R2
3	LoneStar, Tex. L6
3	Wilder, Ky. N9
3	Youngstown R2
3 ½	LoneStar, Tex. L6
4	LoneStar, Tex. L6
4	Wilder, Ky. N9
4	Youngstown R2
5	LoneStar, Tex. L6
5	Youngstown R2
5-6	Benwood, W.Va. W10
6	LoneStar, Tex. L6
6	Wilder, Ky. N9
6	Youngstown R2

Galvanized, Electricweld

Nominal Sizes (inches)	Mill Point, Producer
2	Youngstown R2
2 ½	Youngstown R2
3	Youngstown R2
4	Youngstown R2
5	Youngstown R2
5-6	Benwood, W.Va. W10
6	Youngstown R2

Black, Seamless

Nominal Sizes (inches)	Mill Point, Producer
⅛	Milwaukee G3
¼	Milwaukee G3
¼-6	BeaverFalls, Pa. B1
⅜	Milwaukee G3
½	Milwaukee G3
¾	Milwaukee G3
1	Milwaukee G3
1 ¼	Milwaukee G3
1 ½	Milwaukee G3
2	Aliquippa, Pa. J5
2	Lorain, O. N3
2	Milwaukee G3
2	Youngstown Y1
2-6	Ambridge, Pa. N2
2 ⅜	Aliquippa, Pa. J5
2 ½	Lorain, O. N3
2 ½	Milwaukee G3
2 ½	Youngstown Y1
2 ⅞	Aliquippa, Pa. J5
3	Lorain, O. N3
3	McKeesport, Pa. N3
3	Milwaukee G3
3	Youngstown Y1
3 ½	Aliquippa, Pa. J5
3 ½	Lorain, O. N3
3 ½	McKeesport, Pa. N3
3 ½	Youngstown Y1
4	Aliquippa, Pa. J5
4	Lorain, O. N3
4	McKeesport, Pa. N3
4	Milwaukee G3
4	Youngstown Y1
4 ½	Aliquippa, Pa. J5
5	Aliquippa, Pa. J5
5	Lorain, O. N3
5	McKeesport, Pa. N3
5	Milwaukee G3
5	Youngstown Y1
5 ½	Aliquippa, Pa. J5
5 ⅝	Aliquippa, Pa. J5
6	Aliquippa, Pa. J5
6	Lorain, O. N3
6	McKeesport, Pa. N3
6	Milwaukee G3
6	Youngstown Y1

Galvanized, Seamless

Nominal Sizes (inches)	Mill Point, Producer
2	Aliquippa, Pa. J5
2	Lorain, O. N3
2	Youngstown Y1
2 ⅜	Aliquippa, Pa. J5
2 ½	Lorain, O. N3
2 ½	Youngstown Y1
2 ⅞	Aliquippa, Pa. J5
3	Lorain, O. N3
3	McKeesport, Pa. N3
3	Youngstown Y1
3 ½	Aliquippa, Pa. J5
3 ½	Lorain, O. N3
3 ½	McKeesport, Pa. N3
3 ½	Youngstown Y1
4	Aliquippa, Pa. J5
4	Lorain, O. N3
4	McKeesport, Pa. N3
4	Youngstown Y1
4 ½	Aliquippa, Pa. J5
5	Aliquippa, Pa. J5
5	Lorain, O. N3
5	McKeesport, Pa. N3
5	Youngstown Y1
5 ½	Aliquippa, Pa. J5
5 ⅝	Aliquippa, Pa. J5
6	Aliquippa, Pa. J5
6	Lorain, O. N3
6	McKeesport, Pa. N3
6	Youngstown Y1

Wrought Iron

Mill Point	Producer
Pittsburgh	B14

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Semifinished, Forging Quality

Ingots (carbon)

Chicago F9
Conshohocken, Pa. A3
Farrell, Pa. S3
Fontana, Calif. K1
Houston S5
IndianaHarbor, Ind. Y1
Lowellville, O. S3
Midland, Pa. C18
Monessen, Pa. P7
Munhall, Pa. U5
Nicetown, Phila. M9
Youngstown Y1

Ingots (alloy)

Chicago F9
Conshohocken, Pa. A3
Detroit R7
Duquesne, Pa. U5
Farrell, Pa. S3
Fontana, Calif. K1
Houston S5
IndianaHarbor, Ind. Y1
Lowellville, O. S3
Midland, Pa. C18
Munhall, Pa. U5
Nicetown, Phila. M9
Warren, O. C17
Youngstown Y1

Blooms (carbon)

Aliquippa, Pa. J5
Braddock, Pa. U5
Buffalo R2
Chicago F9
Clairton, Pa. U5
Cleveland J5
Cleveland R2
Conshohocken, Pa. A3
Detroit R7
Duquesne, Pa. U5
Economy, Pa. B14
Ensley, Ala. T2
Fairfield, Ala. T2
Farrell, Pa. S3
Fontana, Calif. K1
Gadsden, Ala. R2
Gary, Ind. U5
Geneva, Utah C11
Houston S5
IndianaHarbor, Ind. Y1
Johnstown, Pa. B2
Lackawanna, N.Y. B2
LosAngeles B3
Lowellville, O. S3
Midland, Pa. C18
Monessen, Pa. P7
Munhall, Pa. U5
Nicetown, Phila. M9
Owensboro, Ky. G8
Pittsburgh J5
Seattle B3
SouthChicago, Ill. R2
SouthChicago, Ill. U5
SouthSanFrancisco B3
Warren, O. C17
Youngstown R2
Youngstown U5
Youngstown Y1

Blooms (alloy)

Bethlehem, Pa. B2
Braddock, Pa. U5
Buffalo R2
Canton, O. R2
Chicago F9
Clairton, Pa. U5
Conshohocken, Pa. A3
Detroit R7
Duquesne, Pa. U5
Economy, Pa. B14
Farrell, Pa. S3
Fontana, Calif. K1
Gary, Ind. U5
Houston S5
IndianaHarbor, Ind. Y1
Johnstown, Pa. B2
LosAngeles B3
Lowellville, O. S3
Midland, Pa. C18
Munhall, Pa. U5
Nicetown, Phila. M9
Owensboro, Ky. G8
Seattle B3
SouthChicago, Ill. R2
SouthChicago, Ill. U5
SouthSanFrancisco B3
Warren, O. C17
Youngstown U5
Youngstown Y1

Slabs (carbon)

Aliquippa, Pa. J5
Braddock, Pa. U5
Buffalo R2
Clairton, Pa. U5
Cleveland J5
Cleveland R2
Conshohocken, Pa. A3
Duquesne, Pa. U5
Ensley, Ala. T2
Fairfield, Ala. T2
Farrell, Pa. S3
Fontana, Calif. K1
Gadsden, Ala. R2
Gary, Ind. U5
Geneva, Utah C11
Houston S5
IndianaHarbor, Ind. Y1
Johnstown, Pa. B2
LosAngeles B3
Lowellville, O. S3
Midland, Pa. C18
Monessen, Pa. P7
Munhall, Pa. U5
Nicetown, Phila. M9
Owensboro, Ky. G8
Pittsburgh J5
Seattle B3
SouthChicago, Ill. R2
SouthChicago, Ill. U5
SouthSanFrancisco B3
Youngstown R2
Youngstown U5
Youngstown Y1

Slabs (alloy)

Bethlehem, Pa. B2
Braddock, Pa. U5
Buffalo R2
Canton, O. R2
Clairton, Pa. U5
Conshohocken, Pa. A3
Detroit R7
Duquesne, Pa. U5
Farrell, Pa. S3
Fontana, Calif. K1
Gary, Ind. U5
Houston S5
IndianaHarbor, Ind. Y1
Johnstown, Pa. B2
LosAngeles B3
Lowellville, O. S3
Midland, Pa. C18
Munhall, Pa. U5
Nicetown, Phila. M9
Owensboro, Ky. G8
Seattle B3
SouthChicago, Ill. R2
SouthChicago, Ill. U5
SouthSanFrancisco B3
Youngstown U5
Youngstown Y1

Billets (carbon)

Aliquippa, Pa. J5
Braddock, Pa. U5
Buffalo R2
Clairton, Pa. U5
Cleveland J5
Cleveland R2
Conshohocken, Pa. A3
Detroit R7
Duquesne, Pa. U5
Economy, Pa. B14
Ensley, Ala. T2
Fairfield, Ala. T2
Farrell, Pa. S3
Fontana, Calif. K1
Gadsden, Ala. R2
Gary, Ind. U5
Geneva, Utah C11
Houston S5
IndianaHarbor, Ind. Y1
Johnstown, Pa. B2
Lackawanna, N.Y. B2
LosAngeles B3
Lowellville, O. S3
Midland, Pa. C18
Monessen, Pa. P7
Munhall, Pa. U5
Nicetown, Phila. M9
Owensboro, Ky. G8
Pittsburgh J5
Seattle B3
SouthChicago, Ill. R2
SouthChicago, Ill. U5
SouthSanFrancisco B3
Warren, O. C17
Youngstown R2
Youngstown U5
Youngstown Y1

Billets (alloy)

Bethlehem, Pa. B2
Braddock, Pa. U5
Buffalo R2
Canton, O. R2
Canton, O. T7
Clairton, Pa. U5
Conshohocken, Pa. A3
Detroit R7
Duquesne, Pa. U5
Economy, Pa. B14
Farrell, Pa. S3
Fontana, Calif. K1
Gary, Ind. U5
Houston S5
IndianaHarbor, Ind. Y1
Johnstown, Pa. B2
Lackawanna, N.Y. B2
LosAngeles B3
Lowellville, O. S3
Midland, Pa. C18
Munhall, Pa. U5
Nicetown, Phila. M9
Owensboro, Ky. G8
Seattle B3
SouthChicago, Ill. R2
SouthChicago, Ill. U5
SouthSanFrancisco B3
Warren, O. C17
Youngstown U5
Youngstown Y1

WIRE RODS (carbon)

Aliquippa, Pa. J5
Alton, Ill. L1
Atlanta A11
Bartonville, Ill. K4
Buffalo W12
Cleveland A7
Donora, Pa. A7
Duluth, Minn. A7
Fontana, Calif. K1
Houston S5
IndianaHarbor, Ind. Y1
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
LosAngeles B3
Monessen, Pa. P7
N.Tonaw'da, N.Y. B11
Pittsburg, Calif. C11
Portsmouth, O. D2
Roebling, N.J. R5
SparrowsPoint, Md. B2
Sterling, Ill. N15
Struthers, O. Y1
Worcester, Mass. A7

COARSE ROUND WIRE

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Manufacturers Coarse Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago W13
Cleveland A7
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Millbury,Mass. N6
Minnequa,Colo. C10
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Rankin,Pa. A7
Shelton,Conn. D5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

SPECIAL PURPOSE WIRE

Armature Binding Wire

Waukegan,Ill. A7
Worcester,Mass. A7

Bag Tie Wire

Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. 81
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1

Bale Tie Wire, Cross Head

Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1

Bale Tie Wire, Single Loop

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1

Baling Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Fairfield,Ala. T2
Fostoria,O. 81
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Shelton,Conn. D5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Binding Wire

Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Shelton,Conn. D5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1

Binding Wire for Box Binding Machines

Alton,Ill. L1
Pittsburg,Calif. C11

Basket Handle Wire

Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fostoria,O. 81
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Can Key Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago C6
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fostoria,O. 81
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
LosAngeles D1
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Clothes Pin Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Crawfordsville,Ind. M8
Donora,Pa. A7
Fairfield,Ala. T2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1

Coat Hanger Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago W13
Cleveland A7
Cleveland A9
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Rankin,Pa. A7
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Concrete Form Twist or Snap Tie Wire

Fairfield,Ala. T2
Monessen,Pa. P7
Pittsburg,Calif. C11

Crimping Wire (except for upholstery)

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
Portsmouth,O. D2
Shelton,Conn. D5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26

Cotter Pin Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Branford,Conn. A12
Buffalo W12
Cleveland A7
Crawfordsville,Ind. M8
Fostoria,O. 81
JerseyCity,N.J. K7
Johnstown,Pa. B2
Kokomo,Ind. C16
LosAngeles D1
Monessen,Pa. P7
Monessen,Pa. P16
Newark,N.J. I-1
Sterling,Ill. C23
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. T6

Foundry Core Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Branford, Conn. A12
Buffalo W12
Chicago W13
Cleveland A7
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fostoria,O. 81
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
LosAngeles B3
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Shelton,Conn. D5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Lintel Wire (or head lining wire)

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Gadsden,Ala. R2
Houston 85
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
LosAngeles B3
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1

Lock Washer Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Donora,Pa. A7
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Massillon,O. R8
Monessen,Pa. P7
Monessen,Pa. P16
Newark,N.J. I-1
Palmer,Mass. W12
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. C23
Struthers,O. Y1
Waukegan,Ill. A7

Loop Wire

Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Crawfordsville,Ind. M8
Fairfield,Ala. T2
Fostoria,O. 81
Gadsden,Ala. R2
Houston 85
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Shelton,Conn. D5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1

Low Metalloid Wire—Grade 1

Branford,Conn. A12
JerseyCity,N.J. K7
KansasCity,Mo. 85
Monessen,Pa. P16
Pittsburg,Calif. C11
Worcester,Mass. W20

Low Metalloid Wire—Grade 2

Branford,Conn. A12
JerseyCity,N.J. K7
KansasCity,Mo. 85
Monessen,Pa. P16
Pittsburg,Calif. C11

Low Metalloid Wire—Grade 3

Bartonville,Ill. K4
Branford,Conn. A12
Cleveland A7
Donora,Pa. A7
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. 85
Monessen,Pa. P7
Monessen,Pa. P16
Pittsburg,Calif. C11
SparrowsPoint,Md. B2
Waukegan,Ill. A7
Worcester,Mass. A7

Metal Stitching Wire

Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. 81
Holyoke,Mass. P18
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. U3
Minnequa,Colo. C10
Monessen,Pa. P16
Newark,N.J. I-1
Palmer,Mass. W12
SparrowsPoint,Md. B2
Waukegan,Ill. A7
Worcester,Mass. J4
Worcester,Mass. W20

COARSE ROUND WIRE

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Needle Wire

NewBrunswick,N.J. W5

Pail Bail Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fostoria,O. S1
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Rope Wire—Mild Plow Steel

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cockeysville,Md. M16
Fostoria,O. S1
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. U3
Kenosha,Wis. M2
LosAngeles B3
LosAngeles D1
Monessen,Pa. P7
Monessen,Pa. P16
Muncie,Ind. I-7
NewHaven,Conn. A7
NewYork W3
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Worcester,Mass. J4
Worcester,Mass. W20

Rope Wire—Plow Steel

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cockeysville,Md. M16
Fostoria,O. S1
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. U3
Kenosha,Wis. M2
LosAngeles B3
LosAngeles D1
Monessen,Pa. P7
Monessen,Pa. P16
Muncie,Ind. I-7
NewHaven,Conn. A7
NewYork W3
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Worcester,Mass. J4
Worcester,Mass. T6
Worcester,Mass. W20

Rope Wire—Improved Plow Steel

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Cockeysville,Md. M16
Fostoria,O. S1
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. U3
Kenosha,Wis. M2
LosAngeles B3
LosAngeles D1
Monessen,Pa. P7
Monessen, Pa. P16
Muncie,Ind. I-7
NewHaven,Conn. A7
NewYork W3
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Worcester,Mass. J4
Worcester,Mass. T6
Worcester,Mass. W20

Galvanized Rope Wire

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Fostoria,O. S1
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. U3
LosAngeles D1
Monessen,Pa. P7
Monessen,Pa. P16
Muncie,Ind. I-7
NewHaven,Conn. A7
Palmer,Mass. W12
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Worcester,Mass. J4
Worcester,Mass. W20

Drawn Galvanized Rope Wire

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Cockeysville,Md. M16
Fostoria,O. S1
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. U3
LosAngeles D1
Monessen,Pa. P7
Monessen,Pa. P16
Muncie,Ind. I-7
NewHaven,Conn. A7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Worcester,Mass. J4
Worcester,Mass. W20

Galvanized Bridge Wire

Houston S5
Johnstown,Pa. B2
KansasCity,Mo. S5
KansasCity,Mo. U3
Monessen,Pa. P16
Muncie,Ind. I-7
Roebling,N.J. R5
Trenton,N.J. A7

Refrigerator Shelf Wire

Fairfield,Ala. T2
Monessen,Pa. P7
Pittsburg,Calif. C11

Screw Driver Wire

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Camden,N.J. P13
Cleveland A7
Donora,Pa. A7
Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
Shelton,Conn. D5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Shoe Nail Wire

Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Jacksonville,Fla. M8
Johnstown,Pa. B2
LosAngeles B3
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Shot Peening Wire

Monessen,Pa. P7

Spoke Wire

Bartonville,Ill. K4
Buffalo W12
Camden,N.J. P13
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Kokomo,Ind. C16
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass J4
Worcester,Mass. W20

Stapling Wire for Box Binding Machines

Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fostoria,O. S1
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
KansasCity,Mo. U3
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Rankin,Pa. A7
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. C23
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Telephone-Telegraph Wire—Extra Best Best

Cleveland A7
Donora,Pa. A7
Duluth A7
Johnstown,Pa. B2
Monessen,Pa. P16
Muncie,Ind. I-7
SparrowsPoint,Md. B2
Waukegan,Ill. A7
Worcester,Mass. A7

Telephone-Telegraph Wire—Best Best

Bartonville,Ill. K4
Cleveland A7
Donora,Pa. A7
Duluth A7
Johnstown,Pa. B2
Monessen,Pa. P7
Monessen,Pa. P16
Muncie,Ind. I-7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Waukegan,Ill. A7
Worcester,Mass. A7

Telephone-Telegraph Wire—Steel

Cleveland A7
Donora,Pa. A7
Duluth A7
Houston S5
Johnstown,Pa. B2
KansasCity,Mo. S5
KansasCity,Mo. U3
Monessen,Pa. P7
Monessen,Pa. P16
Muncie,Ind. I-7
Pittsburg,Calif. C11
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Waukegan,Ill. A7
Worcester,Mass. A7

Screen Wire for Heavy Aggregate

Monessen,Pa. P7
Pittsburg,Calif. C11

Strand Wire

Johnstown,Pa. B2
Pittsburg,Calif. C11
SparrowsPoint,Md. B2

Strapping Wire (or tying wire)

Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Cockeysville,Md. M16
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Rankin,Pa. A7
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Wire for Case Hardened Balls

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Houston S5
Jacksonville,Fla. M8
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Wire for Chain Link Fence

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Rankin,Pa. A7
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Wire for Cold Rolling

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fostoria,O. S1
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
Massillon,O. R8
Monessen,Pa. P7
Muncie,Ind. I-7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. W20

Wire for Electric Welded Automobile and Truck Tire Skid Chains

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. C23
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

COARSE ROUND WIRE

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Wire for Electric Welded Industrial Chains

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Wool Wire

Crawfordsville,Ind. M8
Donora,Pa. A7
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Joliet,Ill. A7
Newark,N.J. I-1
Waukegan,Ill. A7

WIRE FOR UPHOLSTERY SPRING CONSTRUCTIONS

Upholstery Spring Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Donora,Pa. A7
Duluth A7
Johnstown,Pa. B2
KansasCity,Mo. S5
KansasCity,Mo. U3
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7

High Tensile Wire for No-Sag or Zig-Zag Springs

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Donora,Pa. A7
Duluth A7
Johnstown,Pa. B2
KansasCity,Mo. U3
LosAngeles B3
Minnequa,Colo. C10
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7

Hog Ring Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Crawfordsville,Ind. M8
Fairfield,Ala. T2
Fostoria,O. S1
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
Johnstown,Pa. B2
KansasCity,Mo. S5
KansasCity,Mo. U3
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. W20

Regular Lacing Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Jacksonville,Fla. M8
Johnstown,Pa. B2
KansasCity,Mo. S5
LosAngeles B3
Minnequa,Colo. C10
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Special Automatic Lacing Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Donora,Pa. A7
Duluth A7
Johnstown,Pa. B2
KansasCity,Mo. S5
KansasCity,Mo. U3
Minnequa,Colo. C10
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Round Low Carbon Crimping Wire for Upholstery Constructions

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Spring Wire for Severe Crimping or Clinching Upholstery Spring Constructions

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Cockeysville,Md. M16
Donora,Pa. A7
Johnstown,Pa. B2
KansasCity,Mo. S5
LosAngeles B3
Minnequa,Colo. C10
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4

Spring Wire for Manufacture of Close Wound Cross Helical Springs, Short and Long Helical Mattress Springs

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Cockeysville,Md. M16
Donora,Pa. A7
Duluth A7
Johnstown,Pa. B2
KansasCity,Mo. S5
KansasCity,Mo. U3
LosAngeles B3
Minnequa,Colo. C10
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4

Special Upholstery Spring Wire for Use in Automatic Coiling and Knotting Machines

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Donora,Pa. A7
Duluth A7
Johnstown,Pa. B2
KansasCity,Mo. S5
KansasCity,Mo. U3
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Monessen Pa. P16
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7

Regular Round Low Carbon Border Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Round High Carbon Wire in Coils for Borders and Braces

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Donora,Pa. A7
Duluth A7
Johnstown,Pa. B2
KansasCity,Mo. S5
KansasCity,Mo. U3
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7

Round Wire for Link Fabric; To Be Used on Automatic Link Fabric Machines

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Round Low Carbon Frame Wire for Spot Welding

Aliquippa,Pa. J5
Alton,Ill. L1
Atlanta A11
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Camden,N.J. P13
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston S5
Jacksonville,Fla. M8
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
LosAngeles D1
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

WIRE FOR MANUFACTURE OF MECHANICAL SPRINGS

Oil Tempered Spring Steel Wire, MB type

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Fostoria,O. S1
Millbury,Mass. N6
Monessen,Pa. P7
Muncie,Ind. I-7
Portsmouth,O. D2
Roebling,N.J. R5
Sterling,Ill. C23
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W12
Worcester,Mass. W20

Oil Tempered Spring Steel Wire, WMB type

Fostoria,O. S1
Millbury,Mass. N6
NewYork W3
Roebling,N.J. R5
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Hard Drawn Spring Steel Wire, MB type

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Cleveland A7
Cockeysville,Md. M16
Donora,Pa. A7
Duluth A7
Fostoria,O. S1
Johnstown,Pa. B2
KansasCity,Mo. U3
LosAngeles B3
Millbury,Mass. N6
Minnequa,Colo. C10
Monessen,Pa. P7
Monessen,Pa. P16
Muncie,Ind. I-7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. C23
Struthers,O. Y1
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Hard Drawn Spring Steel Wire, WMB type

Cockeysville,Md. M16
Fostoria,O. S1
Johnstown,Pa. B2
Millbury,Mass. N6
Monessen,Pa. P16
Newark,N.J. I-1
NewYork W3
Roebling,N.J. R5
SparrowsPoint,Md. B2
Struthers,O. Y1
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed Spring Steel Wire, MB type

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Cleveland A7
Donora,Pa. A7
Fostoria,O. S1
Johnstown,Pa. B2
LosAngeles B3
Massillon,O. R8
Millbury,Mass. N6
Minnequa,Colo. C10
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass. W12
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. C23
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

COARSE ROUND WIRE

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Spheroidized Annealed Spring Steel Wire, WMB type

Fostoria,O. S1
Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P16
NewYork W3
Roebling,N.J. R5
SparrowsPoint,Md. B2
Struthers,O. Y1
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed and Lightly Drawn (or Bright Soft) Spring Steel Wire, MB type

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Cleveland A7
Donora,Pa. A7
Fostoria,O. S1
Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Minnequa,Colo. C10
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass. W12
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed and Lightly Drawn (or Bright Soft) Spring Steel Wire, WMB type

Fostoria,O. S1
Johnstown,Pa. B2
LosAngeles B3
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P16
NewYork W3
Roebling,N.J. R5
SparrowsPoint,Md. B2
Struthers,O. Y1
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Untempered Spring Steel Wire, MB type

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Donora,Pa. A7
Fostoria,O. S1
Johnstown,Pa. B2
KansasCity,Mo. U3
LosAngeles B3
Massillon,O. R8
Millbury,Mass. N6
Minnequa,Colo. C10
Monessen,Pa. P7
Monessen,Pa. P16
Muncie,Ind. I-7
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Trenton,N.J. A7
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Untempered Spring Steel Wire, WMB type

Fostoria,O. S1
Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P16
NewYork W3
Roebling,N.J. R5
SparrowsPoint,Md. B2
Struthers,O. Y1
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed Spring Steel Wire, HB type

Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Donora,Pa. A7
Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass. W12
Roebling,N.J. R5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed Spring Steel Wire, WHB type

Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P16
Roebling,N.J. R5
SparrowsPoint,Md. B2
Struthers,O. Y1
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed Spring Steel Wire, Extra HB type

Alton,Ill. L1
Cleveland A7
Donora,Pa. A7
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P7
Roebling,N.J. R5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed Spring Steel Wire, Extra WHB type

Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P16
NewYork W3
Roebling,N.J. R5
SparrowsPoint,Md. B2
Struthers,O. Y1
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed and Lightly Drawn Spring Steel Wire, HB type

Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Donora,Pa. A7
Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass. W12
Roebling,N.J. R5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed and Lightly Drawn Spring Steel Wire, WHB type

JerseyCity,N.J. K7
Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P16
Roebling,N.J. R5
SparrowsPoint,Md. B2
Struthers,O. Y1
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed and Lightly Drawn Spring Steel Wire, Extra HB type

Alton,Ill. L1
Bartonville,Ill. K4
Cleveland A7
Donora,Pa. A7
JerseyCity,N.J. K7
Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P7
Monessen,Pa. P16
Roebling,N.J. R5
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Spheroidized Annealed and Lightly Drawn Spring Steel Wire, Extra WHB type

JerseyCity,N.J. K7
Johnstown,Pa. B2
Massillon,O. R8
Millbury,Mass. N6
Monessen,Pa. P7
NewYork W3
Roebling,N.J. R5
Struthers,O. Y1
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Oil Tempered Spring Steel Wire, HB type

Alton,ill. L1
Buffalo W12
Cleveland A7
JerseyCity,N.J. K7
Millbury,Mass. N6
Monessen,Pa. P7
Roebling,N.J. R5
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W12
Worcester,Mass. W20

Oil Tempered Spring Steel Wire, WHB type

JerseyCity,N.J. K7
Millbury,Mass. N6
Roebling,N.J. R5
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Oil Tempered Spring Steel Wire, Extra HB type

Alton,Ill. L1
Cleveland A7
JerseyCity,N.J. K7
Millbury,Mass. N6
Monessen,Pa. P7
Roebling,N.J. R5
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Oil Tempered Spring Steel Wire, Extra WHB type

JerseyCity,N.J. K7
Millbury,Mass. N6
NewYork W3
Roebling,N.J. R5
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Aircraft Steel Spring Wire

Alton,Ill. L1
Buffalo W12
Cockeysville,Md. M16
JerseyCity,N.J. K7
Millbury,Mass. N6
Monessen,Pa. P16
Muncie,Ind. I-7
NewYork W3
Palmer,Mass. W12
Roebling,N.J. R5
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. W20

Music Spring Steel Wire

Alton,Ill. L1
Bartonville,Ill. K4
Cockeysville,Md. M16
JerseyCity,N.J. K7
Millbury,Mass. N6
NewYork W3
Roebling,N.J. R5
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. W20

Valve Spring Wire

JerseyCity,N.J. K7
Millbury,Mass. N6
NewYork W3
Roebling,N.J. R5
Waukegan,Ill. A7
Worcester,Mass. S26
Worcester,Mass. W12

WIRE FOR COLD HEADING AND COLD FORGING

Galvanized Steel Wire for Aluminum Cable Steel Reinforcement

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Cortland,N.Y. W11
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. U3
Monessen,Pa. P7
Monessen,Pa. P16
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Galvanized Strand Wire

Monessen,Pa. P7
Pittsburg,Calif. C11

Machine Screw Wire (for conventional slotted head type screws)

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Camden,N.J. P13
Chicago W13
Cleveland A7
Cleveland C20
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Elyria,O. W8
Fairfield,Ala. T2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
Plymouth,Mich. P5
Portsmouth,O. D2
Shelton,Conn. D5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Sheet Metal Screw Wire (for conventional slotted head type screws)

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Camden,N.J. P13
Chicago W13
Cleveland A7
Cleveland C20
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
Plymouth,Mich. P5
Portsmouth,O. D2
Shelton,Conn. D5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Wood Screw Wire (for conventional slotted head type screws)

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Camden,N.J. P13
Chicago W13
Cleveland A7
Cleveland C20
Crawfordsville,Ind. M8
Donora,Pa. A7
Fairfield,Ala. T2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
LosAngeles B3
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
Plymouth,Mich. P5
Portsmouth,O. D2
Shelton,Conn. D5
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Machine Screw Wire (for recessed head type or struck slot screws)

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Camden,N.J. P13
Chicago W13
Cleveland A7
Cleveland C20
Crawfordsville,Ind. M8
Donora,Pa. A7
Fairfield,Ala. T2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
Monessen,Pa. P7
Pittsburg,Calif. C11
Plymouth,Mich. P5
Portsmouth,O. D2
Shelton,Conn. D5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Sheet Metal Screw Wire (for recessed head type screws or struck slot screws)

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Camden,N.J. P13
Chicago W13
Cleveland A7
Cleveland C20
Crawfordsville,Ind. M8
Donora,Pa. A7
Fairfield,Ala. T2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Monessen,Pa. P7
Pittsburg,Calif. C11
Plymouth,Mich. P5
Portsmouth,O. D2
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

COARSE ROUND WIRE

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Wood Screw Wire (for recessed head type screws or struck slot screws)

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Camden,N.J. P13
Chicago W13
Cleveland A7
Cleveland C20
Crawfordsville,Ind. M8
Donora,Pa. A7
Fairfield,Ala. T2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
Plymouth,Mich. P5
Portsmouth,O. D2
Shelton,Conn. D5
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Aircraft Quality Bolt and Screw Wire

Branford,Conn. A12
Cleveland A7
Cleveland C20
Donora,Pa. A7
Elyria,O. W8
Houston S5
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Newark,N.J. I-1
Plymouth,Mich. P5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Rivet Wire

Fairfield,Ala. T2
Monessen,Pa. P7
Pittsburg,Calif. C11

Wire for Scrapless Nuts

Aliquippa,Pa. J5
Cleveland A7
Cleveland C20
Donora,Pa. A7
Elyria,O. W8
Houston S5
Johnstown,Pa. B2
KansasCity,Mo. S5
LosAngeles B3
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
Plymouth,Mich. P5
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Wire for Manufacture of Special Head Type Screws (fillister head, truss head, binder head, pan head, oven head, large head, socket head)

Aliquippa,Pa. J5
Bartonville,Ill. K4
Branford,Conn. A12
Chicago W13
Cleveland A7
Cleveland C20
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Elyria,O. W8
Fairfield,Ala. T2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
Monessen,Pa. P7
Pittsburg,Calif. C11
Plymouth,Mich. P5
Portsmouth,O. D2
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7

Welding Wire—Electric Arc Welding Quality

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles B3
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
So.SanFrancisco C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7

Welding Wire—Gas Welding Quality

Atlanta A11
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Monessen,Pa. P7
Monessen,Pa. P16
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
SouthChicago,Ill. R2
So.SanFran.,Calif. C10
SparrowsPoint,Md. B2
Sterling,Ill. N15
Struthers,O. Y1
Waukegan,Ill. A7

FINE ROUND WIRE

CARBON

Manufacturers Fine or Weaving Wire

Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Cleveland A7
Cockeysville,Md. M16
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
Holyoke,Mass. P18
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles D1
Monessen,Pa. P16
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Roebling,N.J. R5
Shelton,Conn. D5
Sherman,Tex. S29
So.SanFran.,Calif. C10
Sterling,Ill. N15
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. T6
Worcester,Mass. W20

SPECIAL PURPOSE WIRE

Aircraft Cord Wire

Bartonville,Ill. K4
Buffalo W12
Cockeysville,Md. M16
Holyoke,Mass. P18
JerseyCity,N.J. K7
Monessen,Pa. P16
Muncie,Ind. I-7
NewHaven,Conn. A7
Newark,N.J. I-1
Palmer,Mass. W12
Roebling,N.J. R5
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. T6
Worcester,Mass. W20

Brush Wire, Round Untempered—Low Carbon

Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Cockeysville,Md. M16
Crawfordsville,Ind. M8
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
KansasCity,Mo. S5
Monessen,Pa. P16
Muncie,Ind. I-7
Newark,N.J. I-1
Palmer,Mass. W12
Shelton,Conn. D5
Sterling,Ill. C23
Struthers,O. Y1
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Brush or Scratch Wire, Round Untempered

Buffalo W12
Chicago W13
Cleveland A7
Cockeysville,Md. M16
Houston S5
JerseyCity,N.J. K7
KansasCity,Mo. S5
Monessen,Pa. P16
Muncie,Ind. I-7
Newark,N.J. I-1
Palmer,Mass. W12
Sterling,Ill. C23
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Brush Wire, Round Untempered—High Strength

Buffalo W12
Chicago W13
Cleveland A7
Cockeysville,Md. M16
JerseyCity,N.J. K7
Monessen,Pa. P16
Muncie,Ind. I-7
Newark,N.J. I-1
Palmer,Mass. W12
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Brush Wire, Round Oil Tempered

Alton,Ill. L1
Buffalo W12
Cleveland A7
Fostoria,O. S1
JerseyCity,N.J. K7
Muncie,Ind. I-7
Newark,N.J. I-1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Bookbinder Wire

Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Cleveland A7
Cockeysville,Md. M16
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
Holyoke,Mass. P18
JerseyCity,N.J. K7
Johnstown,Pa. B2
Kokomo,Ind. C16
LosAngeles D1
Palmer,Mass. W12
Pittsburg,Calif. C11
Shelton,Conn. D5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Box Stay, Box Stitch Wire

Holyoke,Mass. P18

Broom Wire

Bartonville,Ill. K4
Branford,Conn. A12
Chicago C6
Chicago W13
Cleveland A7
Cockeysville,Md. M16
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Kokomo,Ind. C16
LosAngeles D1
Monessen,Pa. P16
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Sterling,Ill. C23
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Fish Hook Wire

Bartonville,Ill. K4
Buffalo W12
Cleveland A7
JerseyCity,N.J. K7
NewYork W3
Roebling,N.J. R5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. W20

Flexible Shaft Wire

Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Cleveland A7
Cockeysville,Md. M16
Crawfordsville,Ind. M8
Fostoria,O. S1
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Millbury,Mass. N6
Monessen,Pa. P16
Muncie,Ind. I-7
NewYork W3
Palmer,Mass. W12
Pittsburg,Calif. C11
Roebling,N.J. R5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. T6
Worcester,Mass. W20

Florist Wire

Alton,Ill. L1
Buffalo W12
Chicago C6
Cleveland A7
Cockeysville,Md. M16
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
JerseyCity,N.J. K7
Kokomo,Ind. C16
LosAngeles D1
Newark,N.J. I-1
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. W20

Fuse Wire (for carrying current to electric detonators of explosives)

Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
JerseyCity,N.J. K7
Palmer,Mass. W12
Waukegan,Ill. A7
Worcester,Mass. W20

Hair Pin Wire—Common Grade

Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Chicago C6
Chicago W13
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles D1
Monessen,Pa. P16
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Shelton,Conn. D5
Struthers,O. Y1
Worcester,Mass. W20

FINE ROUND WIRE

CARBON

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Hair Pin Wire—Hard Grade

Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Crawfordsville,Ind. M8
Fostoria,O. S1
Jacksonville,Fla. M8
Johnstown,Pa. B2
KansasCity,Mo. U3
LosAngeles D1
Monessen,Pa. P16
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Hair Pin Wire—Bobby Pin Wire

Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
Fostoria,O. S1
Johnstown,Pa. B2
KansasCity,Mo. U3
Monessen,Pa. P16
Newark,N.J. I-1
NewYork W3
Roebling,N.J. R5
Sterling,Ill. C23
Struthers,O. Y1
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. T6
Worcester,Mass. W20

Hook and Eye Wire

Branford,Conn. A12
Buffalo W12
Cleveland A7
Crawfordsville,Ind. M8
Fairfield,Ala. T2
Fostoria,O. S1
Holyoke,Mass. P18
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Kokomo,Ind. C16
Monessen,Pa. P16
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Shelton,Conn. D5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Hose Reinforcement Wire

Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Cleveland A7
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. U3
Monessen,Pa. P16
Muncie,Ind. I-7
Newark,N.J. I-1
NewYork W3
Palmer,Mass. W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
Struthers,O. Y1
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. T6
Worcester,Mass. W20

Mandolin Wire

JerseyCity,N.J. K7
NewYork W3
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Needle Wire

NewBrunsw'k,N.J. W5

Paper Clip Wire

Aliquippa,Pa. J5
Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Cleveland A7
Cockeysville,Md. M16
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles D1
Monessen,Pa. P7
Newark,N.J. I-1
Palmer,Mass. W12
Pittsburg,Calif. C11
Shelton,Conn. D5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Piano Wire

JerseyCity,N.J. K7
Millbury,Mass. N6
NewYork W3
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. W20

Pin Wire, Straight or Common

Branford,Conn. A12
Buffalo W12
Chicago C6
Cleveland A7
Crawfordsville,Ind. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Kokomo,Ind. C16
Newark,N.J. I-1
Palmer,Mass. W12
Shelton,Conn. D5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Pin Ticket Wire

Alton,Ill. L1
Branford,Conn. A12
Chicago C6
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
Holyoke,Mass. P18
Houston S5
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles D1
Newark,N.J. I-1
Palmer,Mass. W12
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass W20

Pneumatic Tire Bead Wire

Akron,O. J4
Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Cleveland A7
JerseyCity,N.J. K7
Johnstown,Pa. B2
KansasCity,Mo. U3
LosAngeles B3
LosAngeles J4
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass W12
Pittsburg,Calif. C11
Portsmouth,O. D2
Roebling,N.J. R5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. J4
Worcester,Mass. W20

Preformed Staple Wire

Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Cleveland A7
Cockeysville,Md. M16
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Holyoke,Mass. P18
JerseyCity,N.J. K7
Johnstown,Pa. B2
Kokomo,Ind. C16
Palmer,Mass. W12
Pittsburg,Calif. C11
Shelton,Conn. D5
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. T6
Worcester,Mass. W20

Safety Pin Wire

Branford,Conn. A12
Buffalo W12
Cleveland A7
Crawfordsville,Ind. M8
Fostoria,O. S1
JerseyCity,N.J. K7
Johnstown,Pa. B2
Monessen,Pa. P7
Monessen,Pa. P16
Palmer,Mass. W12
Roebling,N.J. R5
Shelton,Conn. D5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. J4
Worcester,Mass. T6
Worcester,Mass. W20

Screen Cloth Wire (for very fine mesh)

Alton,Ill. L1
Bartonville,Ill. K4
Buffalo W12
Chicago W13
Cleveland A7
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
Holyoke,Mass. P18
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
LosAngeles D1
Palmer,Mass. W12
Pittsburg,Calif. C11
So.SanFrancisco C10
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Tape Filler Wire

Cleveland A7
JerseyCity,N.J. K7
Pittsburg,Calif. C11
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Spiral Binding Wire

Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Cleveland A7
Cockeysville,Md. M16
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
Holyoke,Mass. P18
Jacksonville,Fla. M8
JerseyCity,N.J. K7
Johnstown,Pa. B2
Kokomo,Ind. C16
LosAngeles D1
Palmer,Mass. W12
Pittsburg,Calif. C11
Shelton,Conn. D5
Struthers,O. Y1
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. W20

Tag Wire

Alton,Ill. L1
Bartonville,Ill. K4
Branford,Conn. A12
Buffalo W12
Chicago C6
Chicago W13
Cleveland A7
Cockeysville,Md. M16
Cortland,N.Y. W11
Crawfordsville,Ind. M8
Fostoria,O. S1
Holyoke,Mass. P18
Houston S5
JerseyCity,N.J. K7
KansasCity,Mo. S5
Kokomo,Ind. C16
LosAngeles D1
Newark,N.J. I-1
Palmer,Mass. W12
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. T6
Worcester,Mass. W20

TEXTILE WIRE

Card Wire

JerseyCity,N.J. K7
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. T6
Worcester,Mass. W20

Dent Spacer Wire

Buffalo W12
Fostoria,O. S1
Holyoke,Mass. P18
JerseyCity,N.J. K7
Shelton,Conn. D5
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. W20

Reed Wire

Branford,Conn. A12
Cleveland A7
JerseyCity,N.J. K7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. W20

Ring Traveler Wire

Buffalo W12
Cleveland A7
Donora,Pa. A7
Holyoke,Mass. P18
JerseyCity,N.J. K7
Palmer,Mass. W12
Waukegan,Ill. A7
Worcester,Mass. A7
Worcester,Mass. S26
Worcester,Mass. W20

Steel Heddle Wire

Cockeysville,Md. M16
Holyoke,Mass. P18
JerseyCity,N.J. K7
Millbury,Mass. N6
Roebling,N.J. R5
Worcester,Mass. J4
Worcester,Mass. S26
Worcester,Mass. W20

Twin Heddle Wire

JerseyCity,N.J. K7
Worcester,Mass. S26

NAILS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Acoustical

Atlanta A11
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Duluth A7
Gadsden,Ala. R2
Joliet,Ill. A7
Kokomo,Ind. C16
NewBrighton,Pa. T14
Pittsburg,Calif. C11
SouthChicago,Ill. R2
Wareham,Mass.†† T16

Apple Box

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Worcester,Mass. A7

Barge Spikes, Square

Aliquippa,Pa. J5
KansasCity,Mo. S5
Lebanon,Pa. B2

Barrel

Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Basket

Aliquippa,Pa. J5
Atlanta A11
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Monessen,Pa. P7
NewBrighton,Pa. T14
Philadelphia P21
Rankin,Pa. A7
SouthChicago,Ill. R2
Sterling,Ill. N15

Beer Case

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Lynn,Mass. Y2
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Worcester,Mass. A7

Berry Box

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Lynn,Mass. Y2
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Worcester,Mass. A7

Boat

Aliquippa,Pa. J5
Cleveland A9
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10

Boat Spikes, Square

Aliquippa,Pa. J5
Atlanta A11
Cleveland A9
JerseyCity,N.J. A17
KansasCity,Mo. S5
Lebanon,Pa. B2
Wareham,Mass.†† T16

Box

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
NewBrighton,Pa. T14
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Taunton,Mass. R11
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Brads

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Brockton,Mass. S32
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Madison,Ind. T15
Minnequa,Colo. C10
Newark,N.J. I-1
NewBrighton,Pa. T14
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Taunton,Mass. R11
Wheeling,W.Va.†† W10

Broom

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Minnequa,Colo. C10
NewBrighton,Pa. T14
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Worcester,Mass. A7

Car

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Gadsden,Ala. R2
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Lynn,Mass. Y2
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15

Casing

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Cement-Coated Box

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
Monessen,Pa. P7
Newark,N.J. I-1
NewBrighton,Pa. T14
Philadelphia P21
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15

Case Hardened Concrete

Bartonville,Ill. K4
Monessen,Pa. P7
Wareham,Mass.†† T16

Cigar Box

Atlanta A11
Cedarburg,Wis. C26
Chicago W13
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Monessen,Pa. P7
NewBrighton,Pa. T14
Philadelphia P21
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Worcester,Mass. A7

Clinch

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Chicago W13
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Minnequa,Colo. C10
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Clout

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Madison,Ind. T15
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Common

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Coolers

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston S5
Johnstown,Pa. B2
KansasCity,Mo. S5
Kokomo,Ind. C16
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15

Cork Insulation

Aliquippa,Pa. J5
Atlanta A11
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Houston S5
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. S5
Kokomo,Ind. C16
Minnequa,Colo. C10
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15

Cornice

Aliquippa,Pa. J5
Pittsburg,Calif. C11
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10

†† Cut nails.

NAILS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Cottage

Aliquippa,Pa. J5
Conshohocken,Pa.†† A3
Philadelphia P21
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10

Dating

Aliquippa,Pa. J5
Bartonville,Ill. K4
Cleveland A9
Donora,Pa. A7
Duluth A7
Gadsden,Ala. R2
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Philadelphia P21
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Wheeling,W.Va.†† W10

Dowel Pins

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston 85
Johnstown,Pa. B2
KansasCity,Mo. 85
Kokomo,Ind. C16
Lynn,Mass. Y2
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15

Dry Wall

Chicago W13
Cleveland A9
Gadsden,Ala. R2
Houston 85
KansasCity,Mo. 85
Newark,N.J. I-1
Sterling,Ill. N15

Dual Head Anchor

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cleveland A9
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston 85
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
SouthChicago,Ill. R2
Sterling,Ill. N15

Duplex

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cleveland A9
Donora,Pa. A7
Duluth A7
Gadsden,Ala. R2
Houston 85
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15

Egg Case

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Worcester,Mass. A7

Escutcheon Pin

Aliquippa,Pa. J5
Chicago W13
Cortland,N.Y. W11
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Johnstown,Pa. B2
Joliet,Ill. A7
Kokomo,Ind. C16
Newark,N.J. I-1
NewBrighton,Pa. T14
Philadelphia P21
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15

Fence

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Donora,Pa. A7
Duluth A7
Gadsden,Ala. R2
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Fine

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Lynn,Mass. Y2
Madison,Ind. T15
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Worcester,Mass. A7

Finishing

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Brockton,Mass. S32
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Taunton,Mass. R11
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Fire Door

Aliquippa,Pa. J5
Cleveland A9
Conshohocken,Pa.†† A3
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Houston 85
Joliet,Ill. A7
KansasCity,Mo. 85
Philadelphia P21
Rankin,Pa. A7
SouthChicago,Ill. R2
Sterling,Ill. N15
Wareham,Mass.†† T16
Worcester,Mass. A7

Flooring

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Gadsden,Ala. R2
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Foundry

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Chicago W13
Cleveland A9
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Detroit C30
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10

Foundry Chill

Aliquippa,Pa. J5
Atlanta A11
Chicago W13
Cleveland A9
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Joliet,Ill. A7
Monessen,Pa. P7
Newark,N.J. I-1
NewBrighton,Pa. S27
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2

Furniture

Aliquippa,Pa. J5
Atlanta A11
Cedarburg,Wis. C26
Chicago H10
Chicago W13
Cleveland A9
Cleveland H9
Crawfordsville,Ind. MS
Fairhaven,Mass. A21
Houston 85
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Lynn,Mass. Y2
Philadelphia P21
Pittsburg,Calif. C11
Sterling,Ill. N15
Suffern,N.Y. A22

Fruit Box

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Worcester,Mass. A7

Furring

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Kokomo,Ind. C16
Philadelphia P21
SouthChicago,Ill. R2
Wareham,Mass.†† T16
Wheeling,W.Va.††W10

Gutter Spikes

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Donora,Pa. A7
Duluth A7
Gadsden,Ala. R2
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Pittsburg,Calif. C11
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15

Hinge

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Chicago W13
Cleveland A9
Conshohocken,Pa.†† A3
Cortland,N.Y. W11
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa .A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15
Wareham,Mass.†† T16
Wheeling,W.Va.†† W10
Worcester,Mass. A7

Hook Head

Aliquippa,Pa. J5
Bartonville,Ill. K4
Chicago W13
Cleveland A9
Donora,Pa. A7
Fairhaven,Mass. A21
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
NewBrighton,Pa. T14
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Wareham,Mass.†† T16

Hoop Fastener

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Donora,Pa. A7
Duluth A7
Fairfield,Ala. T2
Fairhaven,Mass. A21
Gadsden,Ala. R2
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Minnequa,Colo. C10
Newark,N.J. I-1
NewBrighton,Pa. T14
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Wheeling,W.Va.†† W10

Horse Shoe

Philadelphia P21
NewBrighton,Pa. S27

Lath

Aliquippa,Pa. J5
Atlanta A11
Bartonville,Ill. K4
Cedarburg,Wis. C26
Chicago W13
Cleveland A9
Cortland,N.Y. W11
Crawfordsville,Ind. MS
Donora,Pa. A7
Duluth A7
Fairhaven,Mass. A21
Gadsden,Ala. R2
Henderson,Ky. A21
Houston 85
Johnstown,Pa. B2
Joliet,Ill. A7
KansasCity,Mo. 85
Kokomo,Ind. C16
Lynn,Mass. Y2
Minnequa,Colo. C10
Monessen,Pa. P7
Newark,N.J. I-1
Philadelphia P21
Pittsburg,Calif. C11
Rankin,Pa. A7
SouthChicago,Ill. R2
SparrowsPoint,Md. B2
Sterling,Ill. N15

Lead Head

Atlanta A11
Bartonville,Ill. K4
Fairfield,Ala. T2
Joliet,Ill. A7
Kokomo,Ind. C16
Sterling,Ill. N15

†† Cut nails.

NAILS

(Code number following mill point indicates producing company, key on pages 37 and 38.)

Leakproof Roofing

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Cleveland A9
Donora, Pa. A7
Gadsden, Ala. R2
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Monessen, Pa. P7
Rankin, Pa. A7
SparrowsPoint, Md. B2
Worcester, Mass. A7

Marking

Aliquippa, Pa. J5
Bartonville, Ill. K4
Cleveland A9
Cortland, N.Y. W11
Donora, Pa. A7
Duluth A7
Gadsden, Ala. R2
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
Philadelphia P21
SouthChicago, Ill. R2
SparrowsPoint, Md. B2

Metal Lath

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Donora, Pa. A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Houston 85
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
Newark, N.J. I-1
Philadelphia P21
SouthChicago, Ill. R2
Sterling, Ill. N15

Nursery

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Cedarburg, Wis. C26
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Crawfordsville, Ind. M8
Donora, Pa. A7
Duluth A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Lynn, Mass. Y2
Minnequa, Colo. C10
Monessen, Pa. P7
Philadelphia P21
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15

Orange Box

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Cedarburg, Wis. C26
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Crawfordsville, Ind. M8
Donora, Pa. A7
Duluth A7
Fairfield, Ala. T2
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
Monessen, Pa. P7
Newark, N.J. I-1
Philadelphia P21
Pittsburg, Calif. C11
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15
Worcester, Mass. A7

Painted Siding

Atlanta A11
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Donora, Pa. A7
Duluth A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Monessen, Pa. P7
Newark, N.J. I-1
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15

Pallet

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Chicago W13
Cleveland A9
Crawfordsville, Ind. M8
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Monessen, Pa. P7
NewBrighton, Pa. T14

Plaster Board

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Cedarburg, Wis. C26
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Crawfordsville, Ind. M8
Donora, Pa. A7
Duluth A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
Monessen, Pa. P7
Newark, N.J. I-1
NewBrighton, Pa. T14
Philadelphia P21
Pittsburg, Calif. C11
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15

Poultry Pin

Aliquippa, Pa. J5
Chicago W13
Cleveland A9
Donora, Pa. A7
Duluth A7
Houston 85
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Philadelphia P21
Rankin, Pa. A7
Worcester, Mass. A7

Railroad

Aliquippa, Pa. J5
Bartonville, Ill. K4
Chicago W13
Cleveland A9
Donora, Pa. A7
Gadsden, Ala. R2
Houston 85
Johnstown, Pa. B2
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
SouthChicago, Ill. R2
SparrowsPoint, Md. B2

Ring Shank

Chicago W13
Cleveland A9
Fairhaven, Mass. A21
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Sterling, Ill. N15

Roofing

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Chicago W13
Cleveland A9
Conshohocken, Pa.†† A3
Cortland, N.Y. W11
Crawfordsville, Ind. M8
Detroit C30
Donora, Pa. A7
Duluth A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
Monessen, Pa. P7
Newark, N.J. I-1
Pittsburg, Calif. C11
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15
Wheeling, W.Va.†† W10

Roofing Fasteners

Aliquippa, Pa. J5
Atlanta A11
Chicago W13
Donora, Pa. A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Johnstown, Pa. B2
Joliet, Ill. A7
Kokomo, Ind. C16
SparrowsPoint, Md. B2

Round Wire Spikes

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Donora, Pa. A7
Duluth A7
Gadsden, Ala. R2
Houston 85
JerseyCity, N.J. A17
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
Monessen, Pa. P7
Newark, N.J. I-1
Pittsburg, Calif. C11
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15
Wareham, Mass.†† T16
Wheeling, W.Va.†† W10
Worcester, Mass. A7

Screw-Shank

Chicago W13
Cleveland A9
Cleveland H9
Fairhaven, Mass. A21
KansasCity, Mo. S5
Kokomo, Ind. C16
Lynn, Mass. Y2
Monessen, Pa. P7
NewBrighton, Pa. T14
Sterling, Ill. N15

Shade

Atlanta A11
Cedarburg, Wis. C26
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Donora, Pa. A7
Duluth A7
Fairfield, Ala. T2
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Joliet, Ill. A7
Kokomo, Ind. C16
Minnequa, Colo. C10
NewBrighton, Pa. T14
Philadelphia P21
Pittsburg, Calif. C11
Rankin, Pa. A7
SouthChicago, Ill. R2
Sterling, Ill. N15

Shade Roller Pins

Chicago W13
Cleveland A9
Donora, Pa. A7
Fairfield, Ala. T2
Fairhaven, Mass. A21
Gadsden, Ala. R2
Joliet, Ill. A7
Kokomo, Ind. C16
Minnequa, Colo. C10
Newark, N.J. I-1
NewBrighton, Pa. T14
Philadelphia P21
Rankin, Pa. A7
SouthChicago, Ill. R2

Sheathing

Atlanta A11
Chicago W13
Cleveland A9
Conshohocken, Pa.†† A3
Duluth A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Johnstown, Pa. B2
Joliet, Ill. A7
Kokomo, Ind. C16
Newark, N.J. I-1
Philadelphia P21
Pittsburg, Calif. C11
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15
Wareham, Mass.†† T16
Wheeling, W.Va.†† W10

Sinkers

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Cedarburg, Wis. C26
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Crawfordsville, Ind. M8
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Houston 85
Johnstown, Pa. B2
KansasCity, Mo. S5
Kokomo, Ind. C16
Monessen, Pa. P7
Newark, N.J. I-1
Philadelphia P21
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15

Shingle

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Cedarburg, Wis. C26
Chicago W13
Cleveland A9
Conshohocken, Pa.†† A3
Cortland, N.Y. W11
Crawfordsville, Ind. M8
Donora, Pa. A7
Duluth A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
Monessen, Pa. P7
Newark, N.J. I-1
Philadelphia P21
Pittsburg, Calif. C11
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15
Wareham, Mass.†† T16
Wheeling, W.Va.†† W10
Worcester, Mass. A7

Shoe

Cleveland A9
Donora, Pa. A7
Duluth A7
Fairhaven, Mass. A21
Henderson, Ky. A21
Joliet, Ill. A7
Lynn, Mass. Y2
NewBrighton, Pa. T14
Philadelphia P21
Rankin, Pa. A7
Worcester, Mass. A7

Siding

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Cedarburg, Wis. C26
Chicago W13
Cleveland A9
Conshohocken, Pa.†† A3
Cortland, N.Y. W11
Crawfordsville, Ind. M8
Donora, Pa. A7
Duluth A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Lynn, Mass. Y2
Minnequa, Colo. C10
Monessen, Pa. P7
Newark, N.J. I-1
Philadelphia P21
Pittsburg, Calif. C11
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15
Wareham, Mass.†† T16
Wheeling, W.Va.†† W10
Worcester, Mass. A7

Slating

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Chicago W13
Cleveland A9
Conshohocken, Pa.†† A3
Cortland, N.Y. W11
Crawfordsville, Ind. M8
Donora, Pa. A7
Duluth A7
Fairfield, Ala. T2
Fairhaven, Mass. A21
Gadsden, Ala. R2
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
Newark, N.J. I-1
Philadelphia P21
Pittsburg, Calif. C11
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15
Wareham, Mass.†† T16
Wheeling, W.Va.†† W10
Worcester, Mass. A7

Tile

Aliquippa, Pa. J5
Chicago W13
Cleveland A9
Donora, Pa. A7
Duluth A7
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Minnequa, Colo. C10
Philadelphia P21
Pittsburg, Calif. C11
SparrowsPoint, Md. B2
Sterling, Ill. N15
Worcester, Mass. A7

Under Layment

Aliquippa, Pa. J5
Atlanta A11
Cleveland A9
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Houston 85
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
SouthChicago, Ill. R2
Sterling, Ill. N15
Wareham, Mass.†† T16

Veneer Box

Aliquippa, Pa. J5
Atlanta A11
Bartonville, Ill. K4
Cedarburg, Wis. C26
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Crawfordsville, Ind. M8
Donora, Pa. A7
Duluth A7
Fairfield, Ala. T2
Fairhaven, Mass. A21
Gadsden, Ala. R2
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Minnequa, Colo. C10
Monessen, Pa. P7
Philadelphia P21
Pittsburg, Calif. C11
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15

Weatherstripping

Aliquippa, Pa. J5
Atlanta A11
Cedarburg, Wis. C26
Chicago W13
Cleveland A9
Cortland, N.Y. W11
Donora, Pa. A7
Duluth A7
Fairhaven, Mass. A21
Gadsden, Ala. R2
Henderson, Ky. A21
Houston 85
Johnstown, Pa. B2
Joliet, Ill. A7
KansasCity, Mo. S5
Kokomo, Ind. C16
Madison, Ind. T15
NewBrighton, Pa. T14
Philadelphia P21
Rankin, Pa. A7
SouthChicago, Ill. R2
SparrowsPoint, Md. B2
Sterling, Ill. N15

†† Cut nails.

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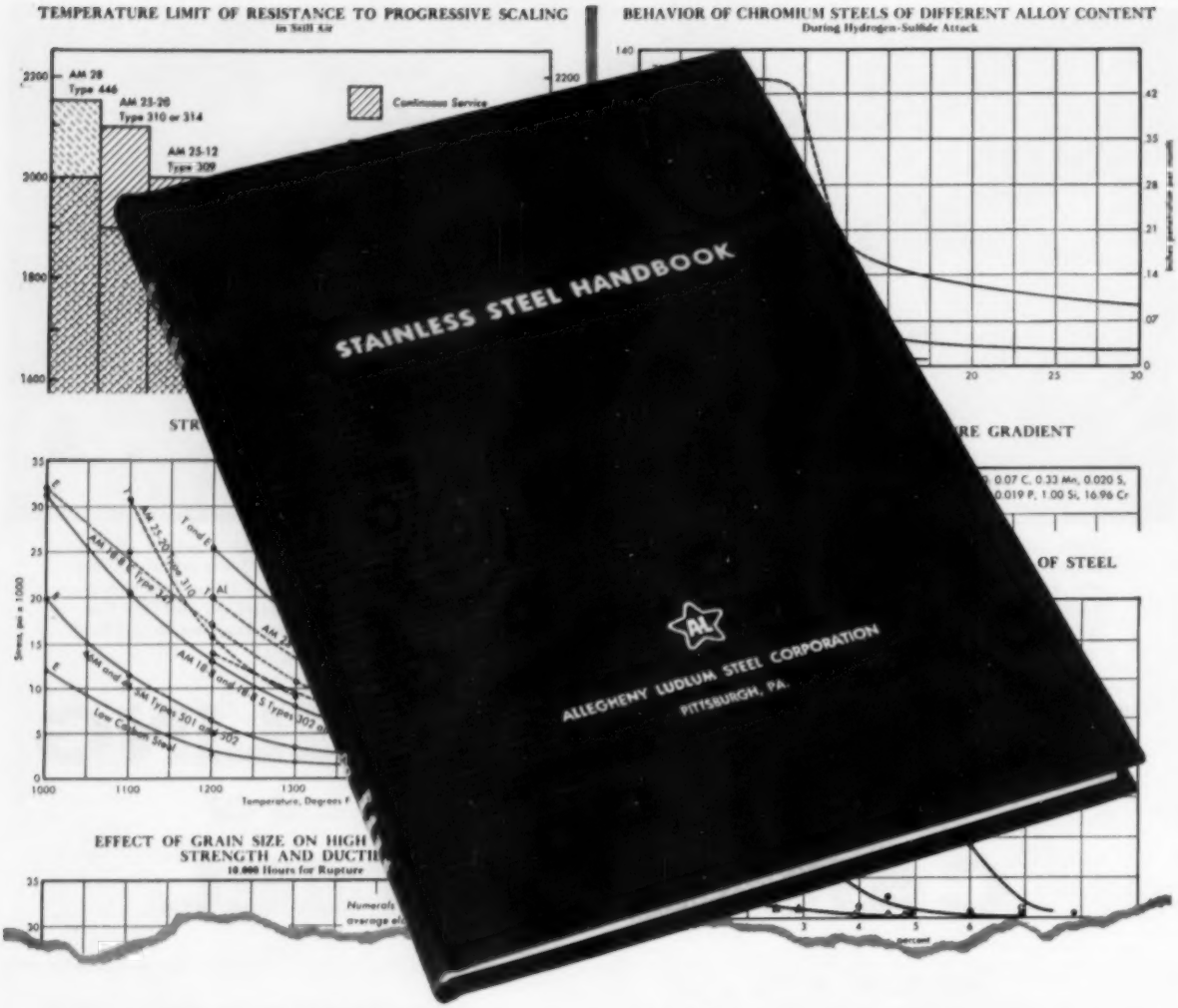

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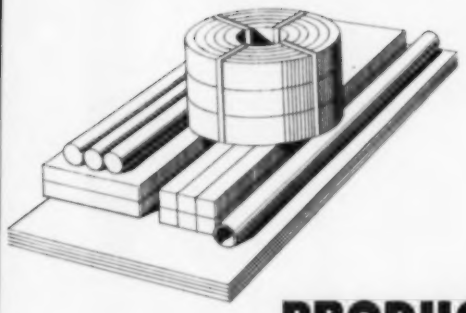

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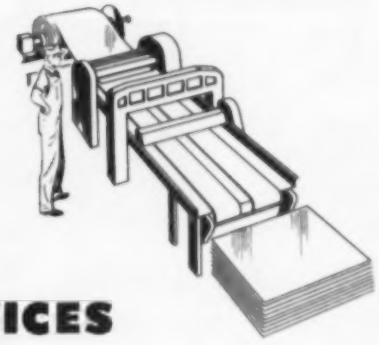

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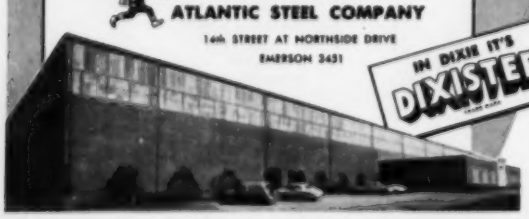

To meet the South's ever-increasing need for steel and a greater variety of steel products, Atlantic Steel Company has doubled its capacity since 1939—increased its output by more than 50% since 1952, when the Southeast's largest electric furnace was placed in operation.

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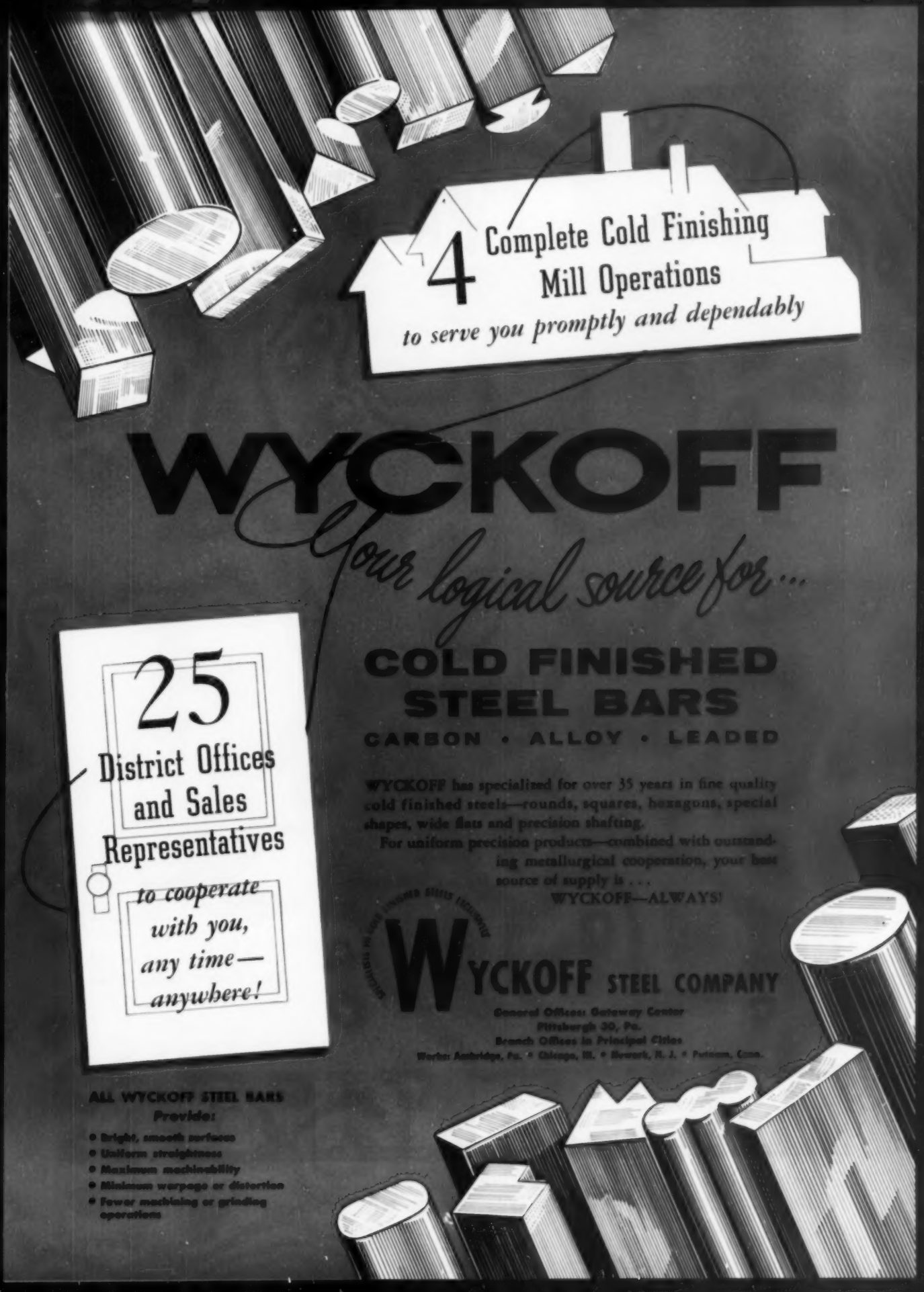
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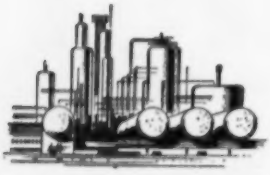
Carbon steels are better today than ever before. A major producer of both carbon and alloy steels, Republic is aware of this fact. Even so, there are limits to the application of carbon steels. Machine design may restrict the size of a part. High strength may be an essential combination with light weight. Sometimes surface hardness and ductility must be held within the limits. Such are the applications in which *only* alloy steels can perform definite tasks with certainty of results at lower ultimate cost.

Take large sections—where hardness must be carried deep into the steel. Heavy crankshafts, connecting rods, piston rods, large gear and axles are examples. Here alloy steels *are necessary,* and the cost low in proportion to results. With carbon held constant, depth-hardening quality increases as the alloy content is increased.

Sometimes weight and space limitations demand that smaller sections carry heavier loads safely. For safety's sake, the answer *must be* alloy steels. Under repeated stress, high tensile strength and hardness do not necessarily indicate high fatigue properties. The load-carrying ability of a steel depends upon its alloy constituents and the form of the structure at the time it is bearing the load.



A problem of high pressures at elevated temperatures may present a problem. But alloy steels *have proved* their high resistance to creep. Some stainless alloys maintain high strength up to 1800° F. They resist oxidation—therefore do not lose their strength appreciably through reduction of section.

High elastic properties and strength may be the primary requirement, especially for welded structures. Weight reduction may be most important. In these applications, low carbon complex alloy steels *offer distinct advantages.* Such alloy steels at equal or higher yield points show low weld-hardening tendencies. Resistance to corrosion is improved. So is ductility of the weld. And retention of toughness at sub-zero temperatures, as well as creep resistance at high temperatures, is better.

To help you get the most from alloy steels, Republic offers you its unique 3-D Metallurgical Service. You benefit from the combined experience and coordinated efforts of three groups of highly-trained men—(1) the Republic Field Metallurgists; (2) the Republic Laboratory Metallurgists; (3) the Republic Mill Metallurgists. All work hand-in-hand to help you do the job you want done with alloy steels at the lowest possible cost. Ask us about this service.

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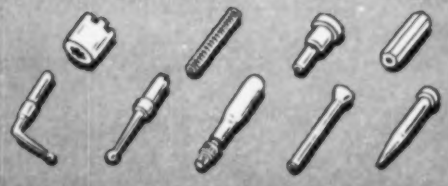

ECONOMY

Considerations of economy, as well as of sound engineering, will often indicate the selection of cold drawn butt welded tubing. Its economical use in place of solids has been frequently overlooked by manufacturers unfamiliar with its possibilities. The fact that it is manufactured to dimensions specified by the purchaser often makes its use profitable where the usual "standard" sizes would require additional machining or other operations.

FORMING

Butt welded tubing can be formed, bent, swaged, or forged, lending itself to designs requiring these operations. Joining to other tubular or solid parts is successfully performed by such standard methods as oxyacetylene welding, arc welding, brazing, soldering and electrical resistance welding of the various types. In making his design, the fabricator may select a tubing size best suited to his requirements without conforming to standard dimensions.

The Pittsburgh Tube Company has facilities to furnish tubing threaded, forged, or hot or cold swaged to close tolerances. An opportunity to quote on customer's requirements in this category is welcomed. Customer's drawings should be submitted so that forming charges can be determined.

APPLICATION

Engineers have recommended and manufacturers have used butt welded tubing in a wide range of applications for the past quarter of a century. The tubing is extensively used in automotive and agricultural machinery for steering tubes, jacks, oil filters, tie rods, brake shafts, drag links, bushings, rollers, spacers, ordnance parts, and so forth; and in the general industrial field for structural parts.

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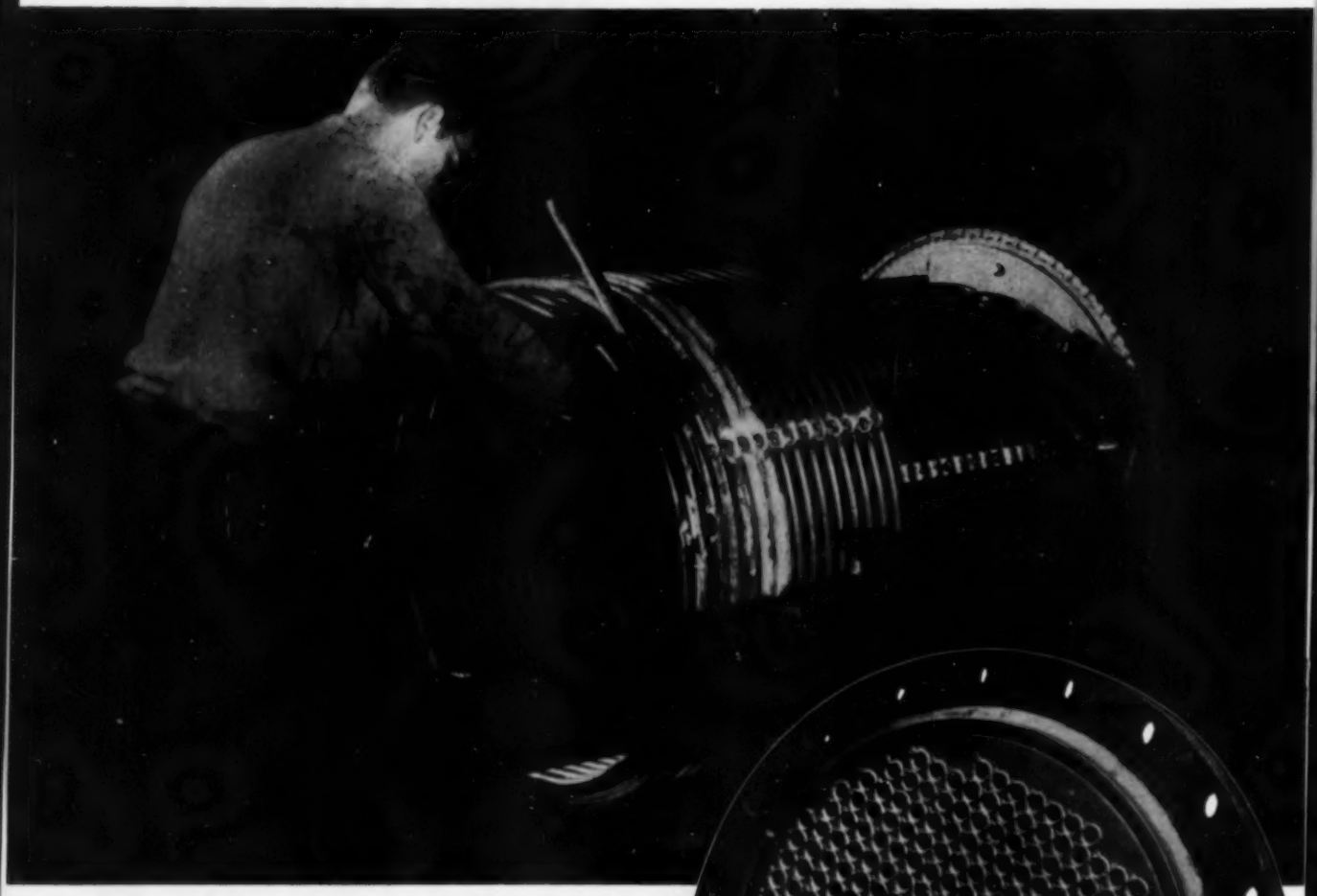
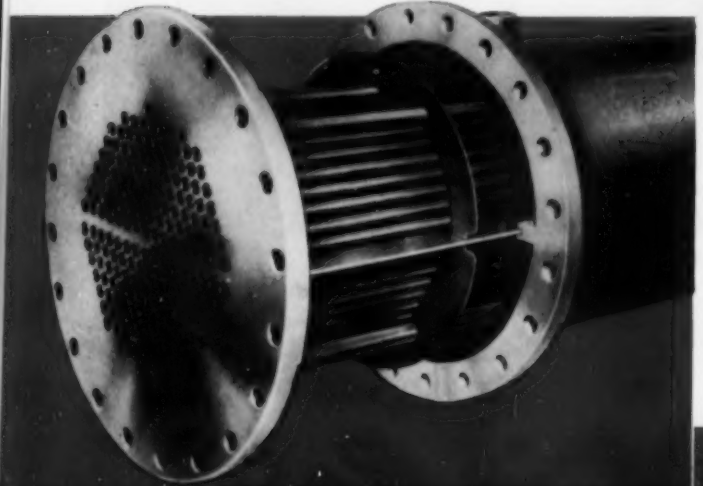


The secret of strength of tubes for power units and heat transfer equipment is in the NATIONAL Seamless method of manufacture—actually piercing a billet of the finest steel to produce a seamless tube. No welds. No joints. No weaknesses.



The ideal heat-transfer apparatus calls for thin-walled tubes with smooth surfaces that offer the *least* resistance to the flow of heat, yet offer the *maximum* resistance to pressure. The obvious answer—NATIONAL Seamless.

strength here?

STRENGTH of materials is unquestionably the primary consideration when designing modern engineering equipment for power generation, petroleum refining, refrigeration, and chemical processing.

Of all known commercial materials that may be fabricated into pipe or tubes for high pressure applications, none approaches the ideal combination of properties desired for this type of service as well as *steel*—either in unalloyed form, or alloyed with such elements as chromium, nickel, or molybdenum.

The ultimate in strength, however, depends on method of fabrication. In tubular material, the ultimate is reached in NATIONAL Seamless Steel Pipe and Tubes. NATIONAL Seamless is pierced from solid billets of high quality steel, one solid forging with no longitudinal weld. This means absolutely uniform wall strength throughout its length. This is the secret of strength of tubes for all types of pressure units.

NATIONAL Seamless Steel Tubes are not only the answer to high pressures, they are available in suitable analyses for handling a variety of mediums—liquid or vapor, acidic or alkaline, alternate wet and dry, corrosive hot oil or gas vapors, sulphur compounds, organic or oxidizing mineral acids, etc.

For the best possible results at the least cost to you, we suggest you get in touch with our engineers *before* you select new pipe or tubes. Their wide experience with all types of pressure and temperature problems will enable them to find the tubular material best suited to your particular application. If you wish additional information don't hesitate to write: National Tube Division, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

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NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

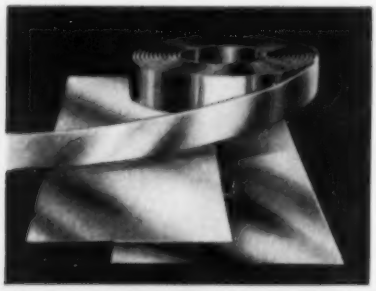
USS National Seamless Steel Tubes

USS

UNITED STATES STEEL

FOLLANSBEE

COLD ROLLED STRIP AND SHEETS



Cold Rolled Strip, coils and cut lengths

34 ga. to 18 ga. incl.
from 3/8" wide up to 24" wide
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Tempers: 1, 2, 3, 4, 5

Cold Rolled Sheets and Coils

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from 24" to 36" incl.
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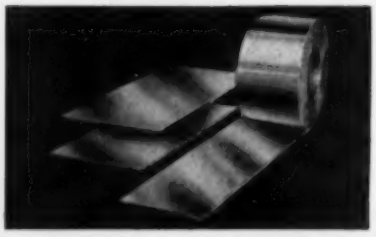

POLISHED BLUE

Polished Blue Sheets and Coils

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strip widths
sheet widths
uniform, shipment after shipment

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Seamless Terne Metal in 50 ft. rolls

Hot Dip Coated 8#, 20#, 40#
(IC 30 ga.) and (IX 28 ga.)
4" to 28" wide, incl.
Furnished painted 2-sides, painted 1-side, or unpainted

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Underwriters' Firedoor Standard
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IC-14" x 20"

IC 5" x 7" Terne Metal Flashing Shingles

Painted two sides

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GENERAL OFFICES, PITTSBURGH 30, PA.

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Cold Rolled Strip

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Typical example of 1-piece stamping from ⅛" thick by 7¾" diameter brass blank.

Here is a one-piece stamping that makes up into a hand stapler part.

STAMPING SPECIALISTS IN DEEP DRAWING WORK - ALL METALS - ALL INDUSTRIES

Brass Box—5" deep—14" square—17⅜" Flange.

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Aluminum Casing — 4¾" deep — 9⅛" wide—16¾" long.

Steel Machinery Part—7¼" deep —10" dia.

Headlight—6¼" deep—7¾" O.D.

Notice the reduction in this 4⅛" long by ½" O.D. tube with 1⅛" flange.

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H. K. Porter Company, Inc. of Pittsburgh
BIRMINGHAM, ALABAMA

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by Buffalo Steel and Connors Steel

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Channeled Flats — Corner Lock Angles
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CONCRETE REINFORCING BARS
BULB TEE ROOFING SECTIONS
FENCE POSTS — SIGN POSTS
TIGHT COOPERAGE HOOPS
BEADED TOBACCO HOGSHEAD HOOPS

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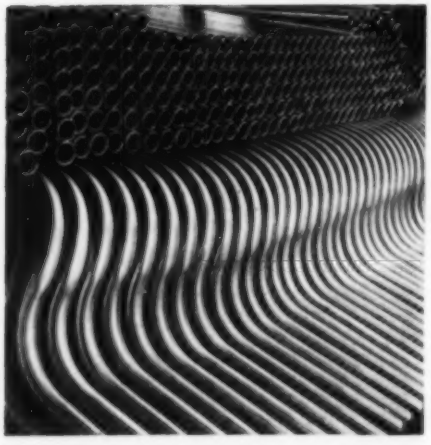
CLINTON, IOWA

Electric-Welded STEEL TUBING

Specialists for Over 18 Years



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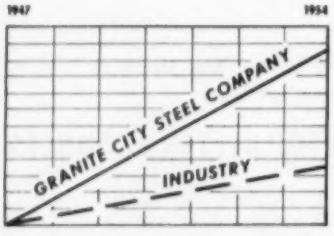
10,000 H. P. Twin Drive 45" x 115" Blooming Mill

Four reasons why Granite City Steel is growing 3 times faster than the industry!



Percentage increase in steel ingot capacity

*Computed from AISI figures.

From 1947 to 1954, ingot capacity of the average U. S. steel mill increased 36%*. During the same period, ingot capacity of Granite City Steel Company expanded 108% — from 620,000 to 1,290,000 tons a year—or three times faster than the industry average!

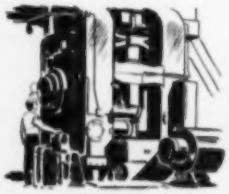
Why? Because the demand for Granite City sheet steel dictated one of the most ambitious plant modernization and expansion programs ever undertaken. An $89 million investment went into blast furnaces, additional coke ovens, new open hearth furnaces . . . a new blooming mill, a new roughing mill . . . sharply stepped-up hot strip mill capacity . . . a new hot rolled shear line, a new cold strip mill.

Result: the world's most modern, fully integrated mill, specializing in high quality flat-rolled steel for Middle America.

What does this growth mean to you? Fast, complete service and personal attention to every order, large or small. Granite City is equipped and eager to serve *you*. May we discuss the steel needs in your business, today?

AND HERE ARE THE OTHER THREE REASONS . . .

Low-cost transportation. Granite City Steel Company is strategically located in the heart of Middle America. Rail, truck and water transportation are available for quick, efficient, economical shipping.



Specialized "know how." For 76 years, flat-rolled steel has been the only product of Granite City Steel Company. This specialization — in training, personnel, equipment — is your guarantee of finest sheet steel available.

Personalized service. Granite City steelmen do not have the manufacturing and sales problems of a large, diversified line of products. This gives them more time to expedite your flat-rolled steel order promptly, properly.

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USS Carilloy Steels in widest range of analyses ... of forms and sizes ... of heat treatments —and to HIGHEST quality standards

● If you want steel that will withstand severe impact and abrasion even at temperatures as low as –150°F. . . . that will resist thermal shock up to 950°F. . . . or that will assure maximum resistance to fatigue and severe tension or torsional stresses—

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If the steel must be quenched and tempered . . . regular or spheroidized annealed . . . normalized . . . stress relieved or tempered . . . or needs other special heat treatments—

If you want it hot rolled . . . in straight lengths or coiled . . . machine or gag straightened . . . flattened . . . machine, cracker or torch cut . . . pickled . . . sand blasted, oiled or limed—

Submit your inquiry and requirements. We can fill your order.

Complete alloy steel producing and finishing facilities, both in Pittsburgh and Chicago, make it possible to expedite deliveries—to reduce shipping time and cost—to give you not only the finest alloy steel produced, but exactly as you want it, no matter where you are located.

Making United States Steel your source of supply gives you access to *expert metallurgical assistance* that is freely provided to help you cut costs both in engineering and production. For fast action, submit your inquiries to our nearest sales office as listed on opposite page.

These are the extreme hot rolled physical limitations to which our products can be furnished:

PLATES	6 1/16" to 154" Wide x .2300" to 6" Thick
SHEETS	24" to 50" Wide x .0568" to .2299" Thick
STRIP	3/8" to 24" Wide x .0568" to .2299" Thick
BARS	Rounds 3/8" to 9" Dia., Flats 1/2" to 6" Wide x .230" to 3" Thick. And a complete range of Hexes, squares, spring flats, precision rounds, bar shapes and Special Sections.
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USS Carilloy Alloy Steels

UNITED STATES

and High Strength Steel needs

These USS High Strength Steels—are weldable, ductile, resist corrosion, impact, fatigue, and impart durability, long life, low maintenance—all at LOW COST—

USS COR-TEN STEEL

What particularly distinguishes USS COR-TEN Steel, in addition to its higher strength, is its unusually high resistance to atmospheric corrosion—4 to 6 times that of plain steel, 2 to 3 times that of copper steel. This property assures long life and low maintenance cost of equipment.

USS COR-TEN Steel is a ductile, low-carbon chromium-nickel-silicon-copper-phosphorus steel having 50,000 psi minimum yield point—at least one and one-half times that of structural carbon steel—and 70,000 psi minimum tensile strength, in thicknesses ½" and under.

Its resistance to abrasion and impact is superior to that of structural carbon steel. Its fatigue resistance—that is, its ability to withstand vibration stresses—is 60% greater.

USS COR-TEN Steel is available in all standard products—plates, structural shapes, bars, sheets, strip and special cold formed sections. It is recommended particularly for application in light and intermediate thicknesses.

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USS TRI-TEN Steel is a tough, versatile steel, widely known for its ability to withstand shock, even at low temperatures.

An excellent welding steel, USS TRI-TEN Steel is particularly recommended for heavy-duty equipment and structures where greater ruggedness and strength, with or without reduced weight, are prime requisites.

USS TRI-TEN Steel has a yield point of 50,000 psi min. and a tensile strength of 70,000 psi min. in thicknesses ½" and under, with moderately lower values as thicknesses increase up to a maximum of 4". Its fatigue resistance is 50% higher than that of structural carbon steel, and its resistance to atmospheric corrosion is superior to that of copper steel.

USS TRI-TEN Steel is available in plates, structural shapes, bars and bar shapes, and is furnished to meet the requirements of ASTM Specification A-242.

USS MAN-TEN STEEL

USS MAN-TEN Steel is a low-cost, high strength, copper-manganese steel intended primarily for weight reduction by means of greater strength in applications involving moderate forming. Its atmospheric corrosion resistance equals that of copper steel.

USS MAN-TEN Steel has a minimum yield point and a tensile strength of 50,000 psi and 75,000 psi respectively in thicknesses up to ½" inclusive.

Its abrasion resistance is greater than that of structural carbon steel (ASTM A7). Its fatigue strength is approximately 40% higher, insuring longer life under the vibration and reversal of stresses to which many types of equipment are subjected.

USS MAN-TEN Steel is available in plates, structural shapes, bars, sheets, strip and special cold formed sections.

USS High Strength Steels

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INDEX TO COMPANIES . . . By Products

SHEETS

Hot-Rolled (carbon) Coils—A1, A3, A10, B2, C11, C18, D2, E6, G4, G5, I-2, J5, K1, M1, N9, P7, R2, S3, T2, U5, W6, W10, Y1

Hot-Rolled (carbon) Cut Lengths—A1, A3, A10, B2, B14, C11, C16, D2, E6, G4, G5, I-2, J5, K1, M1, N9, N12, P7, R2, S3, S5, T2, U5, W6, W10, Y1

Hot-Rolled (high-strength) Coils—A1, A3, A10, B2, C11, C18, G5, I-2, J5, R2, T2, U5, W6, Y1

Hot-Rolled (high-strength) Cut Lengths—A1, A3, A10, B2, C11, G5, I-2, J5, K1, R2, S5, T2, U5, W6, Y1

Cold-Rolled (carbon) Coils—A10, B2, C11, D2, E5, F4, G4, G5, I-2, J5, K1, P7, R2, T2, U5, W6, W10, Y1

Cold-Rolled (carbon) Cut Lengths—A10, B2, C11, D2, E5, F4, G4, G5, K1, I-2, J5, P7, R2, T2, U5, W6, W10, Y1

Cold-Rolled (high-strength) Coils—B2, G5, J5, R2, U5, W6, Y1

Cold-Rolled (high-strength) Cut Lengths—B2, G5, J5, R2, U5, W6, Y1

Galvanized (carbon) Hot-Dipped, Coils—A10, B2, I-2, T2, U5, W10

Galvanized (carbon) Hot - Dipped, Cut Lengths—A10, B2, C11, C16, I-2, N9, N12, N16, R1, R2, T2, U5, W6, W10

Galvanized (high-strength)—C16, U5

Galvanized, Hot-Dipped (commercially pure iron)—A10, N9, R2, W10

Galvannenied (carbon) Cut Lengths—C16, N9, N12, R2, U5

Abrasion Resistant, Hot-Rolled—U5, Y1

Aluminum Coated—A10

Blued Stock—F4, W10

Commercially Pure Iron, Hot-Rolled—A10, N9, R2

Commercially Pure Iron, Cold-Rolled—A10, R2

Corrugated Culvert (copper-bearing)—A10, B2, C11, C16, I-2, N9, R2, T2, U5

Corrugated Culvert (copper iron)—A10, I-2, N9, R2, T2, U5

Corrugated Culvert (pure iron)—I-2, N9, T2, U5

Electrolytically Coated—K1, R2, W6

Enameling, Hot-Rolled—A10, I-2, N12, R2, U5

Enameling, Cold-Rolled—A10, G4, I-2, U5, Y1

Long Ternes—A10, E6, N12, U5, W6, W10

Long Ternes (commercially pure iron)—A10

STRIP

Hot-Rolled (carbon) Coils—A1, A3, A4, A7, A11, B2, B14, C11, C15, D2, G5, I-2, K1, L1, L6, M1, P7, R2, S3, S15, T2, U5, W6, Y1

Hot-Rolled (carbon) Cut Lengths—A1, A3, A4, A10, A11, B2, B3, B14, C10, C11, C15, G5, I-2, K1, L1, L6, M1, M18, N15, P1, P7, P22, R2, S3, S5, S15, T2, U5, W6, W14, Y1

Hot-Rolled (alloy) Coils—A3, B14, S3, S18, U5

Hot-Rolled (alloy) Cut Lengths—A3, B14, S3, S5, S18, U5

Hot-Rolled (high-strength) Coils—A1, A3, A11, G5, I-2, S3, U5, W6, Y1

Hot-Rolled (high-strength) Cut Lengths—A1, A3, A10, A11, B3, G5, I-2, K1, S3, T2, U5, W6, Y1

Cold-Rolled (carbon) Coils—A1, A6, A7, A10, A14, A22, B2, B4, C1, C8, C18, D2, D3, E5, F4, G6, G7, H8, J5, K1, M1, N8, P7, R2, R5, R6, R10, S3, S15, T6, W1, W2, W3, W6, W19, Y1

Cold-Rolled (carbon) Cut Lengths—A1, A6, A7, A10, A14, B2, B4, C1, C8, D2, D3, E5, F4, G6, G7, I-2, J5, K1, M1, N8, P7, R2, R5, R6, S3, S15, T6, W1, W2, W6, W19

Cold-Rolled (alloy) Coils—A7, C7, C8, G6, N8, P7, S3, S18, W2, W3

Cold-Rolled (alloy) Cut Lengths—A7, C7, C8, G6, N8, P7, S3, S18, W2

Cold-Rolled (high-strength) Coils—A1, A7, D3, G6, J5, S3, W2, W6, Y1

Cold-Rolled (high-strength) Cut Lengths—A1, A7, D3, G6, J5, S3, W2, W6

Abrasion Resistant, Hot-Rolled—B3, T2, U5

Commercially Pure Iron, Hot-Rolled—A10, N9, R2

Commercially Pure Iron, Cold-Rolled—A6, A10, R2, R6

Electrolytically Coated—A7, B9, C8, G6, P7, R2, W6

Spring, Annealed, Cold-Finished—A1, A7, A14, C7, C8, C18, G6, H6, P7, R2, R5, R6, S13, S18, T6, W1, W3, W6, Y1

Spring, Tempered, Cold-Finished—A7, A14, C7, C8, C18, H6, R5, T6, W1, W3

ELECTRICAL STEEL

Field Grade, Hot-Rolled, Cut Lengths—E6, I-2, N9, N12, R2, W10

Field Grade, Cold-Rolled, Coils—G4, I-2, R2, U5

Armature Grade, Hot-Rolled, Cut Lengths—A10, E6, I-2, N9, N12, R2, U5, W10

Armature Grade, Cold-Rolled, Coils—A4, G4, I-2, R2

Electrical Grade, Hot-Rolled, Cut Lengths—A4, A10, E6, I-2, N9, N12, R2, U5, W10

Electrical Grade, Cold-Rolled, Coils—A4, G4, I-2, R2, U5

Motor Grade, Hot-Rolled, Cut Lengths—A4, A10, E6, N9, N12, R2, U5, W10

Motor Grade, Cold-Rolled, Coils—A4, G4, R2, U5

Dynamo Grade, Hot-Rolled, Cut Lengths—A4, A10, E6, N9, U5, W10

Dynamo Grade, Cold-Rolled, Coils—A4, R2, U5

Transformer 72, Hot-Rolled, Cut Lengths—A4, A10, U5, W10

Transformer 72, Cold-Rolled, Coils—A4, R2

Transformer 65, Hot-Rolled, Cut Lengths—A10, U5, W10

Transformer 58, Hot-Rolled, Cut Lengths—A10, U5, W10

Transformer 52, Hot-Rolled, Cut Lengths—A10, U5, W10

Transformer 100, Cold-Rolled, Coils—A4

Transformer 100, Cold-Rolled, Cut Lengths—A4, U5

Transformer 90, Cold-Rolled, Coils—A4

Transformer 90, Cold-Rolled, Cut Lengths—A4, U5

Transformer 80, Cold-Rolled, Coils—A4, A10

Transformer 80, Cold-Rolled, Cut Lengths—A4, A10, U5

Transformer 73, Cold-Rolled, Coils—A4, A10

Transformer 73, Cold-Rolled, Cut Lengths—A4, A10, U5

TIN MILL PRODUCTS

Black Plate—B2, C11, G4, I-2, J5, K1, R2, T2, U5, W6, W10, Y1

Coke Tin Plate—B2, C11, I-2, J5, K1, R2, T2, U5, W6, W10, Y1

Differentially Coated Tin Plate—W6, W10

Electrolytic Tin Plate—B2, C11, G4, I-2, J5, K1, R2, T2, U5, W6, W10, Y1

Holloware Enameling Black Plate—F4, U5, W10, Y1

Manufacturing Ternes—U5, W10

Roofing Short Ternes—F4, U5, W10

PLATES

Sheared or Flame Cut (carbon)—A3, B2, B14, C5, C11, C22, I-2, K1, L7, S5, T2, U5

Sheared or Flame Cut (alloy)—A3, B14, C22, J5, K1, L7, N9, S5, U5, Y1

Sheared or Flame Cut (high-strength)—A1, A3, A10, B2, C11, I-2, J5, K1, S5, T2, U5, W6, Y1

Universal (carbon)—B2, B3, B14, C5, C10, C18, E6, I-2, J5, K1, S3, T2, U5, W14

Universal (alloy)—B14, C18, J5, K1, S3, U5

Universal (high-strength)—B2, B3, C18, J5, K1, S3, T2, U5

Strip Mill (carbon)—A1, A3, A10, B2, E6, G4, G5, J5, L6, M1, N9, U5, W6, W10, Y1

Abrasion Resistant—B2, B3, C11, K1, S32, T2, U5, Y1

Commercially Pure Iron—A10, N9, R2

Corrugated Culvert (copper iron)—R2

Floor Plate—A3, I-2, J5, U5

Wrought Iron—B14

BARS

FLATS

Hot-Rolled, Square Edge (carbon)—A11, A17, B2, B3, B11, B12, B14, C2, C10, C11, C15, C17, C18, D4, F5, G5, I-2, J5, K1, K6, L1, M14, M18, N15, O4, P1, P22, R2, S5, S19, T2, T10, U5, W6, W7, W14, Y1

Hot-Rolled, Auto Leaf Spring (carbon)—B3, I-2, K1, W14, Y1

Hot-Rolled, Draft Key (carbon)—I-2, R2, T2, U5, Y1

Hot-Rolled, Nut (carbon)—B11, I-2, J5, R2, T2, U5, W14, Y1

Hot-Rolled, Round Edge Concave (carbon)—I-2, K1, R2, U5, Y1

Hot-Rolled, Round Edge Over-all (carbon) A11, A17, B2, B3, B12, B14, C2, C18, C23, F5, I-2, J5, K6, M11, R2, S19, T2, U5, W6, W14, Y1

Hot-Rolled (alloy)—B2, B14, C17, C18, D4, G5, J5, K1, M14, O4, R2, S5, U5, Y1

Hot-Rolled (high-strength)—A11, B3, C23, G5, I-2, K1, M14, S5, T2, U5, W6, Y1

Cold-Finished (carbon)—A7, B4, B5, B11, C12, C23, F3, J5, K3, K5, L2, M12, M13, M19, P5, P13, R2, R8, S17, S30, W18, W19, Y1

Cold-Finished (alloy)—A7, B2, B5, C12, C23, F3, K3, K5, L2, M12, P5, R2, R8, S17, W18, Y1

SQUARES

Hot-Rolled (carbon)—A11, A17, B3, B11, B12, B14, C2, C10, C11, C15, C17, C18, D4, F5, G5, I-2, J5, K1, K6, L1, M11, M14, M18, N15, O4, P1, P22, R2, S5, S19, T2, T10, U5, W7, W14, Y1

Hot-Rolled (alloy)—B2, B14, C17, C18, D4, J5, K1, M14, O4, R2, S5, T7, U5, Y1

Hot-Rolled (high-strength)—A11, B3, C23, G5, I-2, K1, M14, S5, T2, U5, Y1

Cold-Finished (carbon)—A7, B5, C12, C17, C18, C20, C23, F3, J5, K3, K5, L2, M12, M13, M19, P5, P13, P17, R2, R8, S17, S30, W8, W18, Y1

They Produce

This list compiled from the preceding pages of this guide shows you what companies produce the various forms of steel. Companies are listed by code numbers. For key to the code see pp. 37 and 38

Cold-Finished (alloy)—A7, B2, B5, C12, C17, C18, C20, C23, F3, K3, K5, L2, M12, M13, P5, P13, R2, R8, S17, W8, W18, Y1

ROUND CORNERED SQUARES

Hot-Rolled (carbon)—A11, B2, B3, C17, C18, G5, G8, I-2, J5, K1, N15, P1, R2, R7, S19, T2, T10, U5, W7, W14, Y1

Hot-Rolled (alloy)—B2, C17, C18, G8, J5, K1, R2, R7, S5, U5, Y1

Hot-Rolled (high-strength)—A11, B3, C23, G5, K1, R7, T2, U5, Y1

Cold-Finished (carbon)—C20, C23, K3, K5, L2, P17, R8, W18, Y1

Cold-Finished (alloy)—C20, C23, K5, L2, R8, W18, Y1

ROUNDS

Hot-Rolled (carbon)—A11, A17, B2, B3, B11, B12, B14, C2, C10, C11, C15, C17, C18, D4, F5, G5, G8, I-2, J5, J7, K1, K6, L1, M11, M14, M18, N15, O4, P1, P22, R2, R7, S5, S19, T2, T10, U5, W7, W14, Y1

Hot-Rolled (alloy)—B2, B14, C17, C18, D4, G8, J5, K1, M14, O4, R2, R7, S5, T7, U5, Y1

Hot-Rolled (high-strength)—A11, B3, G5, I-2, K1, M14, R7, S5, T2, U5, Y1

Cold-Finished (carbon)—A7, B5, B11, C12, C17, C18, C19, C20, F3, F7, J5, K3, K5, L2, M5, M12, M13, N5, P2, P5, P13, P17, R2, R7, R8, S17, S30, W8, W14, W18, Y1

Cold-Finished (alloy)—A7, B2, B5, C17, C18, C20, F3, F7, K3, K5, L2, M12, M13, P2, P5, P13, R2, R7, R8, S17, T7, W8, W14, W18, Y1

HALF ROUNDS

Hot-Rolled (carbon)—A11, B3, D4, K6, L1, T2, U5, W7

Hot-Rolled (alloy)—D4, U5

Hot-Rolled (high-strength)—B3, C23, T2, U5

Cold-Finished (carbon)—C23, F3, K3, K5, W18

Cold-Finished (alloy)—C23, F3, K5, W18

HEXAGONS

Hot-Rolled (carbon)—B2, C2, C10, C17, C18, D4, F5, G5, I-2, J5, K6, M14, R2, R7, T2, U5, Y1

Hot-Rolled (alloy)—B2, C17, C18, D4, J5, M14, R2, R7, U5, Y1

Hot-Rolled (high-strength)—C22, G5, I-2, M14, R7, U5, Y1

Cold-Finished (carbon)—A7, B5, C12, C17, C18, C20, C23, F3, J5, K3, K5, L2, M12, M13, P5, P13, P17, R2, R7, S17, S30, W8, W18, Y1

Cold-Finished (alloy)—A7, B2, B5, C12, C17, C18, C20, C23, F3, K3, K5, L2, M12, M13, P5, P13, R2, R7, S17, W8, W18, Y1

OCTAGONS

Hot-Rolled (carbon)—C2, C17, D4, F5, K6, T2, W7

Hot-Rolled (alloy)—B2, C17, D4, R2

Cold-Finished (carbon)—C17, F3, K5, L2, P17, W18

Cold-Finished (alloy)—B2, C17, K5, L2, W18

OVALS (blunt)

Hot-Rolled (carbon)—A11, C2, F5, I-2, L1, U5, W14

Hot-Rolled (alloy)—U5

Hot-Rolled (high-strength)—A11, U5

Cold-Finished (carbon)—F3, K5, W18

Cold-Finished (alloy)—F3, K5, W18

OVALS (sharp)

Hot-Rolled (carbon)—L1, W7

Cold-Finished (carbon)—F3, K5, W18

Cold-Finished (alloy)—F3, K5, W18

HALF OVALS

Hot-Rolled (carbon)—A11, B3, C2, D4, F5, I-2, L1, T2, U5, W14

Hot-Rolled (alloy)—D4, U5

Hot-Rolled (high-strength)—A11, B3, C23, T2, U5

Cold-Finished (carbon)—C23, K5, W18

Cold-Finished (alloy)—C23, K5, W18

BAR-SIZE SHAPES

ANGLES

Equal, Fillet (carbon)—A11, A17, B3, B12, C2, C10, C11, C15, F5, I-2, J5, J8, K1, K6, L1, M11, M18, N13, N15, O4, P1, P4, P22, R2, S5, S19, T2, U5, V4, W14, Y1

Equal, Square Root (carbon)—A11, B3, I-2, K6, N13, T2, V4, W7

Unequal, Fillet (carbon)—A11, B2, B3, B12, C2, C10, C11, C15, F5, I-2, J5, J8, K1, K6, L1, M11, N13, O4, P1, P4, P22, R2, S5, S19, U5, V4, W7, W14, Y1

Unequal, Square Root (carbon)—K6, N13, T2, U5, V4

Equal, Fillet (alloy)—J5, K1, O4, S5, U5

Unequal, Fillet (alloy)—J5, K1, O4, S5, U5

Unequal, Square Root (alloy)—U5

Equal, Fillet (high-strength)—A11, B3, I-2, J5, K1, S5, T2, U5, Y1

Equal, Square Root (high-strength)—A11, B3, T2

Unequal, Fillet (high-strength)—A11, B3, I-2, J5, K1, S5, T2, U5, Y1

Unequal, Square Root (high-strength)—U5

CHANNELS

Carbon—A11, B3, B12, C2, C11, F5, K6, L1, P1, P22, S5, U5, V4, W7, W14

Alloy—U5

High-strength—A11, B3, U5

TEES

Equal (carbon)—A11, B3, B12, C2, F5, I-2, M11, P22, U5, W7

Unequal (carbon)—B3, I-2, U5

Equal (alloy)—U5

Unequal (alloy)—U5

Equal (high-strength)—A11, B3, U5

Unequal (high-strength)—B3, U5

ZEES

Carbon—C2, U5, W14

Alloy—U5

High-strength—U5

SPECIAL SECTIONS

Hot-Rolled (carbon)—A11, B2, B3, B12, C2, C10, D4, F5, I-2, J5, K1, K6, M11, M14, R2, S19, T2, T10, U5, V4, W7, W14, Y1

Hot-Rolled (alloy)—B1, B2, D4, M14, R2, U5, Y1

Hot-Rolled (high-strength)—A11, B3, C23, K1, M14, T2, U5, Y1

Cold-Finished (carbon)—B5, C23, F3, J5, K3, K5, L2, M13, P5, P17, R2, R8, S17, S30, W8, W18, Y1

Cold-Finished (alloy)—B5, F3, K3, K5, L2, M13, P5, P13, R2, R8, S17, W8, W18, Y1

REINFORCING BARS

Deformed (carbon)—A11, A17, B2, B3, B12, C2, C10, C11, F5, I-2, J5, J7, J8, K1, K6, L1, M11, M18, N13, N15, O4, P1, P8, P22, R2, S5, S19, T2, T10, U5, W7, Y1

MISCELLANEOUS BARS

Abrasion Resistant, Hot-Rolled—B3, T2, U5

Rail Steel Bars—B12, C2, F5, I-2, J8, L1, M11, N13, S19

Wrought Iron Bars—B14, L5

STRUCTURALS

ANGLES

Equal (carbon)—B2, B3, B12, C10, C11, C15, I-2, J5, J8, K1, K6, M17, O4, P1, P4, P22, R2, S5, S19, T2, U5, V4, W14, Y1

Equal (alloy)—J5, K1, M17, O4, S5, U5, Y1

Equal (high-strength)—B2, B3, C11, I-2, J5, K1, M17, S5, T2, U5, Y1

Unequal (carbon)—B2, B12, C2, C10, C11, C15, F5, I-2, J5, J8, K1, K6, M17, O4, P1, P4, P22, R2, S5, S19, T2, U5, V4, W7, W14, Y1

Unequal (alloy)—J5, K1, M17, O4, S5, U5, Y1

Unequal (high-strength)—B2, B3, C11, I-2, J5, K1, M17, S5, T2, U5, Y1

Bulb (carbon)—B2, C11, I-2, P4, T2, U5

Bulb (alloy)—U5

Bulb (high-strength)—B2, C11, I-2, T2, U5

Special (carbon)—B12, I-2, K1, M17, U5, Y1

Special (alloy)—M17, U5, Y1

Special (high-strength)—M17, U5, Y1

BEAMS

Standard "I" (carbon)—B2, B3, C10, C11, I-2, J5, K1, P4, S5, T2, U5, W6, Y1

Standard "I" (alloy)—K1, S5, U5

Standard "I" (high-strength) — B2, B3, C11, I-2, J5, K1, S5, U5, Y1

"H" (carbon)—C10, C11, I-2, K1, P4, T2, U5, W6

"H" (alloy)—K1, U5

"H" (high-strength)—C11, I-2, K1, U5

Wide Flange (carbon)—B2, K1, U5, W6

Wide Flange (alloy)—K1, U5

Wide Flange (high-strength)—B2, K1, U5

CHANNELS

Standard (carbon)—B2, B3, C10, C11, I-2, J5, K1, K6, M17, O4, P1, P4, P22, R2, S5, T2, U5, V4, W6, W14

Standard (alloy)—K1, M17, O4, S5, U5

Standard (high-strength)—B2, B3, C11, I-2, J5, K1, M17, S5, T2, U5

Carbuilding (carbon)—B2, C11, I-2, K1, M17, T2, U5

Carbuilding (alloy)—K1, M17, U5

Carbuilding (high-strength)—B2, C11, I-2, K1, M17, U5

Shipbuilding (carbon)—B2, C11, I-2, K1, M17, P4, T2, U5

Shipbuilding (alloy)—K1, M17, U5

(Continued on next page)

Index to Companies

(Continued from preceding page)

Shipbuilding (high-strength) — B2, C11, I-2, K1, M17, U5

TEES
Equal Leg (carbon)—B2, B3, M17, U5
Equal Leg (alloy)—M17, U5
Equal Leg (high-strength)—B2, B3, M17, U5
Unequal Leg (carbon)—B2, J5, P4, M17, U5
Unequal Leg (alloy)—M17, U5
Unequal Leg (high-strength)—B2, M17, U5
Elevator (carbon)—U5
Elevator (alloy)—U5
Elevator (high-strength)—U5

ZEES
Carbon—B2, C11, I-2, P4, T2, U5, Y1
Alloy—U5, Y1
High-strength—B2, C11, I-2, T2, U5, Y1
Carbuilding (carbon)—C11, I-2, U5, Y1
Carbuilding (alloy)—U5, Y1
Carbuilding (high-strength)—C11, I-2, U5, Y1

Carbon Special Sections — B2, B3, I-2, J5, K1, M17, P4, U5, V4, W14, Y1
Carbon Cold-Formed Sections —M17, U5
Carbon Bearing Piles—B2, U5
Carbon Sheet Piling—B2, I-2, U5, W6

TUBING

SEAMLESS, Mechanical
Round, Hot-Finished—B1, G3, J5, N2, N3, P7, T7, Y1
Round, Cold-Finished—B1, G3, M7, N3, O2, P2, P7, S2, S22, S23, S31, T7, T12
Square, Hot-Finished—G3
Square, Cold-Finished—B1, G3, M7, N3, P2, S23
Rectangular, Hot-Finished—G3
Rectangular, Cold-Finished—B1, G3, M7, N3, P2, S23

WELDED, Mechanical
Round, Hot-Rolled—A10, B1, B9, C25, E8, H8, J5, L1, M15, M20, N9, N11, O2, P2, R2, R9, S14, S28, S31, T8, V4, W9, W21, Y1
Round, Cold-Rolled—A10, A23, B1, B9, B13, C25, E8, F10, H8, J5, M15, M20, N3, N11, O2, P2, P9, R2, R9, S2, S14, S28, S31, T8, U10, V4, W2, W9, W21, Y1
Square, Hot-Rolled—A10, B9, J5, M15, M20, N11, O2, P2, R2, R9, S14, S31, V4, W21
Square, Cold-Rolled—A10, B9, J5, M15, N11, O2, P2, R2, R9, S14, S31, V4, W21
Rectangular, Hot-Rolled—A10, J5, M20, N11, O2, P2, R2, R9, S14, S31, V4
Rectangular, Cold-Rolled—A10, J5, M11, M20, O2, P2, R2, R9, S14, S31, V4
Pressure Tubing—A23, B1, G3, M7, M15, N2, N3, O2, R2, S2, S14, S23, T7, T12, W21
Rail Steel Tubing—C2, R2

PIPE

BLACK, Standard
Buttweld—B2, F6, J5, K1, L1, N2, N3, R2, S4, S31, W9, W10, Y1
Electricweld—L6, N9, R2, W10
Seamless—B1, G3, J5, N2, N3, Y1

GALVANIZED, Standard
Buttweld—B2, F6, J5, K1, L1, N2, N3, R2, S4, S31, W9, W10, Y1
Electricweld—R2, W10
Seamless—J5, N3, Y1
Wrought Iron—B14

SEMIFINISHED

Ingots, Forging (carbon)—A3, C18, F9, K1, M9, P7, S3, S5, U5, Y1
Ingots, Forging (alloy)—A3, C17, C18, F9, K1, M9, R7, S3, S5, U5, Y1
Blooms, Forging (carbon)—A3, B2, B3, B14, C11, C17, C18, F9, G8, J5, K1, M9, P7, R2, R7, S3, S5, T2, U5, Y1
Blooms, Forging (alloy)—A3, B2, B3, B14, C17, C18, F9, G8, K1, M9, R2, R7, S3, S5, U5, Y1
Slabs, Forging (carbon) — A3, B2, B3, C11, C18, G8, J5, K1, M9, P7, R2, S3, S5, T2, U5, Y1
Slabs, Forging (alloy)—A3, B2, B3, C18, G8, K1, M9, R2, R7, S3, S5, U5, Y1
Billets, Forging (carbon) — A3, B2, B3, B14, C11, C17, C18, G8, J5, K1, M9, P7, R2, R7, S3, S5, T2, U5, Y1
Billets, Forging (alloy) — A3, B2, B3, B14, C17, C18, G8, K1, M9, R2, R7, S3, S5, T7, U5, Y1
Wire Rods — A7, A11, B2, B3, B11, C11, C16, D2, J3, K1, K4, L1, N15, P7, R5, S5, W12, Y1

COARSE ROUND WIRE

A3, A7, A9, A11, A12, B2, B3, C6, C10, C11, C16, C20, C23, D1, D2, D5, I-1, I-7, J4, J5, K4, K7, L1, M2, M8, M16, N6, N15, P5, P7, P13, P16, P18, R2, R5, R8, S1, S5, S26, T2, T6, U3, W3, W5, W8, W11, W12, W13, W20, Y1

FINE ROUND WIRE

A7, A12, B2, B3, C6, C10, C11, C16, C23, D1, D2, D5, I-1, I-7, J4, J5, K4, K7, L1, M8, M16, N6, N15, P16, P18, R5, S1, S5, S26, S29, T6, U3, W3, W5, W11, W12, W13, W20, Y1

NAILS

A3, A7, A9, A11, A17, A21, A22, B2, C10, C11, C16, C26, C30, H9, H10, I-1, J5, K4, M8, N15, P7, P21, R2, R11, S5, S27, S32, T2, T14, T15, T16, W10, W11, W13, Y2

Advertising Index

Allegheny Ludlum Steel Corporation ... 92
Allied Chemical & Dye Corporation, General Chemical Division 16
American Steel & Wire Division, United States Steel Corporation 28, 29
Atlantic Steel Co. 94
Automotive Materials Corporation, Pilgrim Drawn Steel Division 8

Buffalo Steel Division, H. K. Porter Co., Inc. 104

Central Steel Tube Co. 105
Cold Metal Products Co., The 4
Columbia-Geneva Steel Division, United States Steel Corporation ... 28, 29, 100, 101
Columbia Steel & Shafting Co. 24
Connors Steel Division, H. K. Porter Co., Inc. 104
Copperweld Steel Co. 97
Crucible Steel Company of America .. 34, 35

Dolan Steel Co., Inc. 5

Eastern Tool & Stamping Co., Inc. 103
Eaton Manufacturing Co., Reliance Division 32
Electro Metallurgical Co., A Division of Union Carbide & Carbon Corporation 26, 27

Follansbee Steel Corporation 102

General Chemical Division, Allied Chemical & Dye Corporation 16
Granite City Steel Co. 106
Great Lakes Steel Corporation 25

Johnson Steel & Wire Co., Inc. 22
Jones & Laughlin Steel Corporation 17, 18, 19, 20

Kaiser Steel Corporation 36

Lamson & Sessions Co., The 6, 7
La Salle Steel Co. 107
Linde Air Products Co., A Division of Union Carbide & Carbon Corporation . 21

Michigan Steel Tube Products Co. 9

National Roll & Foundry Co., The ... 31
National Steel Corporation 23, 25
National Tube Division, United States Steel Corporation 100, 101
Peninsular Steel Co. 11
Pilgrim Drawn Steel Division, Automotive Materials Corporation 8
Pittsburgh Steel Co. 3
Pittsburgh Tube Co. 99
Porter, H. K., Co., Inc., Buffalo Steel Division 104
Porter, H. K., Co., Inc., Connors Steel Division 104

Reliance Division, Eaton Manufacturing Co. 32
Republic Steel Corporation 14
Republic Steel Corporation, Alloy Steel Division 98
Rotary Electric Steel Co. 33

Sharon Steel Corporation 12, 13
Solar Steel Corporation 93

Tennessee Coal & Iron Division, United States Steel Corporation 28, 29
Torrington Manufacturing Co., The 10

Union Carbide & Carbon Corporation, Electro Metallurgical Co. 26, 27
Union Carbide & Carbon Corporation, Linde Air Products Co. 21
United States Steel Corp., Subsidiaries 28, 29, 100, 101, 108, 109
United States Steel Export Co. 28, 29, 100, 101

Washburn Wire Co. 96
Weirton Steel Co. 23
Wheeling Steel Corporation 91
Wyckoff Steel Co. 95

Youngstown Foundry & Machine Co., The 15
Youngstown Sheet & Tube Co., The 30

Standard Classification of Flat-Rolled Steel Products

COLD-ROLLED . . .

WIDTHS, INCHES	THICKNESSES, INCHES		
	.250 and thicker	.2449 to .0142	.0141 and thinner
Over ½ to 12 incl.	Bar	Strip	Strip
Over 12 to 23-15/16 incl.	Strip(1)	Strip(1)	Strip(1)
Over 12 to 23-15/16 incl.	Sheet(2)	Sheet(2)	Black Plate(2)
Over 24 to 32 incl.	Sheet	Sheet	Tin Mill Black Plate
Over 32	Sheet	Sheet	Sheet

(1) When a particular temper or a special edge or finish is specified.
(2) When no special temper, edge or finish is specified.

HOT-ROLLED . . .

WIDTHS, INCHES	THICKNESSES, INCHES								
	.230 and thicker	.2299 to .2031	.2030 to .180	.1799 to .0568	.0567 to .0449	.0448 to .0344	.0343 to .0255	.0254 to .0142	.0141 and thinner
To 3½ incl.	Bar	Bar	Strip	Strip	Strip	Strip	Strip	Sheet*	Sheet*
Over 3½ to 6 incl.	Bar	Bar	Strip	Strip	Strip	Strip	Sheet*	Sheet*	Sheet*
Over 6 to 12 incl.	Plate	Strip	Strip	Strip	Sheet	Sheet*	Sheet*	Sheet*	Sheet*
Over 12 to 32 incl.	Plate	Sheet	Sheet	Sheet	Sheet	Sheet*	Sheet*	Sheet*	
Over 32 to 48 incl.	Plate	Sheet	Sheet	Sheet	Sheet	Sheet*	Sheet*	Sheet*	Sheet*
Over 48	Plate	Plate	Plate	Sheet	Sheet	Sheet*	Sheet*	Sheet*	Sheet*

*Hot-rolled annealed

STEEL